

The Adjustment of the Peoples of Asia to
the Desert and Steppe Environments

by

Mary Gertrude Myers

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Thesis

THE ADJUSTMENT OF THE PEOPLES OF ASIA TO THE
DESERT AND STEPPE ENVIRONMENTS

by

Mary Gertrude Myers
(B.A., Smith College, 1945)

Submitted in partial fulfillment
of the requirements for the degree of
Master of Arts

1946

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1. Approved by James P. Heston
First Reader

2. Approved by James Heston
Second Reader

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INTRODUCTION

Statement of Purpose

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The words "desert" and "steppe" bring to mind areas that are generally unfavorable to human habitation, offering only limited possibilities and a mode of life that has not radically changed since the areas were occupied by man. Some of the areas were the scenes of great civilizations and empires that enjoyed their periods of greatness and then faded not to rise again. Other areas lay on the great caravan routes that linked the Occident and the Orient before the days of ocean transport. These localities were also the scenes of countless wars and in-

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INTRODUCTION

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It is the purpose of this study to analyse the desert and steppe environments of Asia, and to find out the manner of life which the people have adopted so as to gain the greatest livelihood from the adverse conditions of their desert and steppe habitats. The area to be considered stretches from the Mediterranean Sea across the heart of Asia to Manchuria. The regions to be considered are Anatolia, Syria, Palestine, Arabia, Iraq, Iran, Afghanistan, Baluchistan, Northwest India, Manchuria, Mongolia, Sinkiang, Tibet, Soviet Central Asia and Siberia. Generally speaking, these areas may be thought of as being made up of deserts and steppes with mountains also included in them.

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vasion movements as the routes to Europe lay across the deserts and steppes.

It will be shown below that the people live in the same manner as their ancestors. The improvements and the advances made have not come from the native peoples, but rather from outside influences. It will also be shown that of the two types of environment under consideration only the steppe offers any real possibilities for the future.

Justification of Study

This study is justified by the fact that the area is not one that is generally known. There are numerous travel accounts of which probably the most famous is the one by Marco Polo, and the scenes he describes may be seen today in the same places. Other well-known persons who have written accounts of their travels are Sven Hedin, Ellsworth Huntington, Owen Lattimore and Roy Chapman Andrews. In reading about the various areas it is plain that extensive work has been done on certain ones, and relatively little work along the lines of geography has been done on others. Therefore, this study aims at gathering together the material, and using it to illustrate the manner of life of the various peoples to be considered.

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In discussing the desert and steppe environments an account of the history, trade routes, and the racial characteristics of the people will be included here. A general geographic discussion of the area will be taken up in the first chapter. The second chapter will discuss the people of the desert and steppe environments, and the last will include a statement of the possibilities for future development of this part of Asia.

History

The history of Asia has been one of great empires that have come and gone, of invasions and great movements of peoples, and, more recently, of British and Russian expansion.

The history of Anatolia has always been influenced by the East and the West. The earliest routes of the East went through the country, and it has always been the scene of conflicting eastern and western influences.¹ This area has been the seat of two great empires; the Byzantine and the Ottoman. At the dawn of history it was occupied by a non-Aryan group of people, the Hittites. In 546 B.C. the Persians conquered the area, and in the seventh century B.C. it was seized by the Armenians. Later, Greek influence reached the country and was followed by the Roman period. In 1071 the Seljuk Turks defeated the Byzantine Empire at Manzikert, and for four

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centuries after this date waves of nomadic Turks, Mongols, and Tatars swept over the country and destroyed its wealth and prosperity.² Later the Ottoman Empire was established and reached its peak under Solyman the Magnificent (1520-66). Thereafter, Turkey gradually declined until the first World War when it was reduced to the position it now holds.

The early history of Iraq was a constant struggle for supremacy between different contending nations. The heart of the Assyrian Empire was on the plain east of Mosul between the Tigris and Khazr Rivers.³ The lower plain of Mesopotamia was the site of the Babylonian Empire. This region was formerly a vast expanse of fertile land cut by irrigation canals. The country remained rich until the Battle of Kadisia (635 A.D.) which placed it at the mercy of the Arabs. Later came the nomadic invasions of the Turks, Mongols and Tatars who completed the destruction started by the Arabs with the result that the great irrigation works were neglected, and the country was abandoned to the nomads.⁴ The modern history of Iraq begins in 1920 when the three former Turkish vilayets of Basra, Baghdad and Mosul were made a British mandate. In 1927 the country was recognized as independent.⁵ There have been several invasions

2. Ibid., pp. 441.

3. Ibid., pp. 447.

4. Ibid., pp. 447.

5. G.B. Cressy, Asia's Lands and Peoples, 1944. p. 405.

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The history of Afghanistan is that of a typical buffer state.⁶ At the beginning of its history the country belonged to Persia. Early in the Christian era it was conquered by the Buddhist Kushan tribe from Central Asia and their domination lasted till the ninth century. Following this period the

6. L.D. Stamp, Asia, 1944. p. 160.

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Baluchistan is a part of India, and the British have played an important part here since 1839. The political divisions are British Baluchistan given to Britain by treaty in 1879, the Agency Territories directly under British officers, and the Indian states of Kalat and Bela.

The history of Mongolia "deals chiefly with conquests of great kings and struggles of rival tribes, and many of its pages are crowded with incidents of butchery and a terrible story of ravage and destruction. The history is the story of one of the hardy, brawny races cradled amidst want and hard circumstances."⁸

In the twelfth century a process of consolidation of various tribes began which came to a head under Genghis Khan, who extended the power of Mongol authority far down into China and west well into Russia. He united the East for the first time by gradually subduing neighboring tribes, and made one of the most perfect military machines the world has ever seen.⁹

7. Ibid., p. 165.

8. H.H. Howorth, History of the Mongols, 1876. p. x.

9. P.T. Etherton, The Last Strongholds, pp. 169-198.

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His grandson Kubla Khan continued the expansion, and at the height of his power near the end of the thirteenth century ruled an area reaching from the eastern shores of Asia to the Baltic and from the Arctic Circle to the northern border of India. This expansion was carried out by the use of extraordinarily able and swiftly moving armies of horsemen who were absolutely ruthless in their destruction of life and property. The great period of the Mongol Empire lasted from 1204 to 1294. Another great conqueror was Tamerlane (1333?-1405) who had Central Asia under his control. After his death the empire soon disintegrated.

During the last one hundred years there has been a steady expansion of Chinese population and influence into Mongolia. The southern half was ruled as four special administrative areas in the later years of the Manchu Dynasty (1644-1911), and in 1928 the area was changed into provinces of the Chinese Republic. In 1924 the western part of Outer Mongolia was made into a semi-independent soviet republic.

Tibet was not a national or political unit before the beginning of the seventh century A.D. Before then there were numerous tribes who were not aboriginals, but rather, were immigrants from western China who lived in the mountains. In the seventh century the king organized the priesthood and introduced religious spirit. The Buddhist religion was founded here in the eighth century. In 1270 the series of priest-kings

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The detached oases of Sinkiang have affected history. They have never possessed enough resources to support a powerful army, but owing to their isolation and their proximity to the mountains they were destined to fall under every powerful force which swept down from the undefended frontier and seized them.¹¹ In many places once extensive oases supporting prosperous populations have become desert in historic times, but whether this indicates progressive dessication is still debatable.¹² Until medieval times Sinkiang only played a small part in the general history of Asia. It lay on the highway between the East and the West, and the great migrations generally passed through the Tarim Basin. During the Han Dynasty (202 B.C.-221 A.D.) missions crossed the area to Parthia. China conquered the area in 59 B.C. In the middle of the sixth

10. A.E. Haydon, The New Orient, Vol. II, pp. 83-87.

11. E. Sykes, Through Deserts and Oases of Central Asia, 1920. p. 2.

12. K.C. Latourette, The Chinese, Their History and Culture, Vol. 1, 1934. p. 17.

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century Sinkiang was attacked by the Western Turks, and in 658 the Tang Dynasty (618-907) reconquered the area. It was then known as the "Four Garrisons" of Kuche, Khotan, Karashar and Kashgar. Between 670 and 692 this area was under the control of Tibetans. Christianity and Zoroastrianism were introduced in 692 and Islam, in the middle of the tenth century. Genghis Khan invaded Chinese Turkestan in 1218, and in 1375 the country was invaded by Tamerlane.¹³ In the twentieth century serious civil war has occurred several times. Soviet influence is strong, and the control of the Central Chinese Government is only nominal. Since 1936 with the inauguration of reconstruction plans notable changes have taken place. Stations for the improvement of agriculture and animal husbandry are developing, and major improvements have taken place in communications.¹⁴

Some of the cities of Sinkiang have historical significance. Urumchi, the capital, in the eighteenth century was a Manchu-Chinese military center.¹⁵ Khotan, before the Mohammedan conquest, was inhabited by an Iranian population with a large colony of Indian merchants, and the people were Buddhists. After the Mohammedan conquest in the year 1000 the city seems to have kept its Buddhist religion. From the thirteenth century on it owed its allegiance to China, and continued a semi-

13. Sykes, op. cit., pp. 248-267.

14. G.B. Cressy, Asia's Lands and Peoples, 1944. p. 153.

15. E. Teichman, Journey to Turkistan, 1937, p. 100.

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13. Sykes, *op. cit.*, pp. 245-267.
 14. G. S. Grew, *China's New Frontier*, 1944, p. 153.
 15. E. Tschichmann, *Journeys in Turkestan*, 1927, p. 100.

independent existence under the overlordship of China till the eighteenth century. At this time it formed a part of the state of the Kodjas, and after this was under the Jungar Mongols till 1758. Since that date it has been under Chinese rule.¹⁶ Kara Korum was an old Mongol capital.¹⁷ Kashgar is not rich in remains of the past. Until 1917 it was the chief trading center with Russian Turkestan.¹⁸ Hami was known as Kamul to the Turki, and was the center of one of the old native kingdoms of Eastern Turkestan and the last to lose its independent status. The Chinese took control of the city in 1930.¹⁹ Yarkand was at one time the capital of ancient Tartary and the royal residence of the Afrasiab dynasty. It is on the caravan route from China to Afghanistan, Persia and Turkey, but it gradually fell in importance, but with the Russian advance into Asia it became a strategic point.²⁰

Soviet Central Asia was known to the Persians. The area was invaded by the White Huns, the Turks, the Arabs, Genghis Khan and by Tamerlane. It also lay along the silk route of the Middle Ages. Under Peter the Great (1682-1725) the period of Russian expansion into this area began. He attempted to take Central Asia under his control by siding with one khan

16. G.N. Roerich, Trails to Inmost Asia, 1931, pp. 61-62.

17. O. Lattimore, The Desert Road to Turkestan, 1929. p.211.

18. Roerich, op. cit., p. 91.

19. Teichman, op. cit., p. 83.

20. P.T. Etherton, In the Heart of Asia, 1926, p. 134.

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18. Roerich, op. cit., p. 91.
19. Teichman, op. cit., p. 85.
20. P.T. Fetherston, In the Heart of Asia, 1926, p. 134.

against another and by mixing in their feuds. The result of this was disaster. It was found advisable, therefore, to advance more slowly and to build in the steppes and deserts a number of forts to protect the frontier districts settled by the Russians. In the eighteenth century the principal bases of support for the slow offensive were Orenburg and Semipalatinsk. By the middle of the nineteenth century the Kirghiz of Northern Turkestan were already subjugated, and Russia had a firm hold on the Sir Darya and the left bank of the Ili River.²¹ Tsarism did not undertake the conquest of the area until the latter half of the nineteenth century. The social structure remained largely unchanged, and the feudal system of land tenure was not replaced until 1925. The social structure is based on a complex irrigation system and a high density of population in the arable oases.²² In the sixties of the nineteenth century Turkestan and Tashkent were captured. With this territory gone the khan of Khokand was dependent on Russia. There was a revolt against Russia in Khokand in 1876, and the khanate was occupied and renamed the "Fergana Territory". This was followed by war with Bukhara, and in 1868 a large part of this khanate was directly annexed to Russia with the rest left under the khan with certain stipulations. Khiva was the next area to

21. S.V. Platonov, History of Russia, 1928, p. 388.

22. W. Mandel, The Soviet Far East and Central Asia, 1944. p. 97.

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fall in 1873 with the khan allowed to remain under certain Russian conditions.²³ The Turkomans were also soon suppressed, and the Russians pushed on. Until 1917 the political divisions were the Transcaspian Province, the Khanate of Khiva, the Governor-Generalship of Turkestan, the Provinces of Semiretchinsk and Semipalatinsk, and the Provinces of Akmolinsk, Yurgai and Uralsk. In the first World War the people at first were exempt from military service, but were later made to fight. They therefore revolted and were suppressed after a bloody campaign.²⁴

The sovietizing of Turkestan proceeded cautiously and intelligently. Nationalism was fostered and the area was broken up into five areas of equal standing.²⁵ They are Kazakhstan, Kirghizia, Uzbekistan, Tajkistan and Turkmenistan. The second World War brought out the importance of this area.

The cities of Bukhara and Samarkand have had historical significance. Bukhara was regarded as the first city of Mohammedanism in Asia. Its history goes back centuries before the Christian era. It has been successively attacked and occupied by all conquerors of ancient times from Alexander the Great to Genghis Khan and Tamerlane, and was enriched and despoiled by them.²⁶ The city was occupied by Russia in 1868.

23. Platonov, op. cit., pp. 388-9.

24. Mandel, op. cit., p. 89.

25. E. Lengyel, Siberia, 1943. p.383.

26. Etherton, op. cit., pp. 147-8.

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The origin of Samarkand is unknown. It was plundered by Alexander the Great in 329 B.C., and in the eighth century was a center of Arab culture. Genghis Khan conquered it in the thirteenth century, and Tamerlane made it his capital in 1370. He built the brilliantly decorated mosques, tombs and other buildings that still stand.²⁷

Trade Routes

The Dzungarian Gate was an important highway as it forms a natural channel of communication between East and West Turkestan. From the earliest times it was a natural route for caravans, armies and migrating populations. The Huns who came into Europe, and the armies of Genghis Khan moved through it.²⁸

The oases of Turan were stepping-stones along the ancient caravan routes of Inner Asia. The road followed the foot of the mountains from one river to another. Silks and art goods from China and India to Greece, Rome and Roman Britain flowed along it. The merchants met at Samarkand, Bukhara and Merv.²⁹ The Assyrians had a jade route here from the Tarim Basin, and Tamerlane fought here near Merv.³⁰

The famous Silk Road ran from the western point of Kansu Province to Lop Nor, and then along the foot of the Kunlun

27. Cressy, op. cit., p. 349.

28. G.F. Wright, Asiatic Russia, 1903, p. 217.

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30. L.W. Lyde, The Continent of Asia, 1933, p. 86.

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Mountains to Khotan, Yarkand and Kashgar.³¹ Sinkiang commands the only low-level gateway between the East and the West, and highways have crossed it since the dawn of history.³²

The great highway of Central Asia leads west from Sian to Lanchow and then follows along the arm of Kansu through the oases of Liangchow, Kanchow, Suchow to Ansi. West of Ansi the original Silk Road entered Sinkiang and followed the southern edge of the Tarim Basin past Lop Nor to Yarkand, but the oases are now largely in ruins and the route crosses extremely desolate country. The present road strikes north from Ansi and crosses barren desert to Hami at the foot of the Tien Shan. Here the road divides, One road leads north along the oases south of the mountains through the Turfan Depression to Kashgar. The other and currently more important road lies north of the Tien Shan through Kuchengtze to Hami.³³

Routes also lead from Mesopotamia via Buraydahim in Najd following Wadi-al-Rummah, and from Syria passing through Wadi Sirhan and skirting the Red Sea coast. Intrapeninsular routes were either coastal, fringing nearly the whole peninsula, or transpeninsular running southwest-northeast through the central oases and avoiding the Rub al Khali.³⁴

31. O. Lattimore, Inner Asian Frontiers of China, 1940, p.172.

32. Cressy, op. cit., p. 151.

33. Ibid., p. 152

34. P.K. Hitti, History of the Arabs, 1943, p. 18.

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Racial Characteristics

The population of the deserts and steppes of Asia naturally is not a dense one due to the adverse conditions. The area cannot support many as it offers only limited possibilities. There are many different groups in the area, and the following discussion will give their racial characteristics.

The nomads in Anatolia are Turkomens, Tatars, Avshars, Yuruks all of Turkish or Mongol origin. They are widely distributed.³⁵

Arabia is the homeland of the Semites and also has an ancient Hamitic population in the south.³⁶ The Semites have jet black hair, and an elliptical face with a straight or convex nose. The Bedouins of Northern Arabia are of medium stature and are dolichocephalic. The Himyarites of southern Arabia are also of medium stature, but are meso-cephalic.³⁷

The majority of the population of Iraq is now Arabian, and the people are both sedentary and nomadic. The original population is still represented by the Kurds, Yezidis, and Chaldeans.³⁸ Some of the people are Armenoid. Their stature is medium to short, their hair almost invariably black or black-brown and the eyes are usually brown. Their nose is very large and

35. Mill, op. cit., p. 442.

36. A.C. Haddon, The Races of Man, 1925, p. 103.

37. Ibid., p. 25.

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differs considerably in index. The head is flattened behind and is usually very high, sloping to a point well behind the bregma. The brow ridges are often largely developed.³⁹

The people of Persia are Kurds, Arabs and Armenians. There are two large ethnical groups, the Tajiks and the Persians. The two groups of Persians are the Farsi who are slender and dolichocephalic with fair skin and abundant hair and beard of dark chestnut color, and the Lori. The latter are taller, much darker and often have black hair. They are very dolichocephalic with an oval face and regular features.⁴⁰

Afghanistan is the homeland of the Indo-Afghan race.⁴¹ The Hazara, Afridi and Tajiks live here. The tribes in the country are the Duranis, Ghilzais, Aimaks, Hindkis, Jats, Uzbeks and the Kafirs.⁴² The Pathans are a white race who call themselves Beni Israel as they claim descent from the ten lost tribes. They live along the Indian frontier and are divided into numerous tribes among which are the Wazanis, the Afrides and the Mangals. The Hazaras are Mongols with yellow skin and sparse beards. They are peaceful, courageous agriculturalists and pastoralists. The Turkomens are of Turkish origin, and the Tajiks of Persian origin. The Baluchis live in the southern

39. L.H.D. Buxton, The Peoples of Asia, 1925, pp. 55-6.

40. Haddon, op. cit., pp. 110-11.

41. Ibid., p. 111.

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deserts.⁴³

The Indo-Afghanus group lives in Baluchistan, Afghanistan and northwest India. They have black, wavy hair, and a very light, transparent brown complexion. Their stature is variable. They are dolicho-mesocephalic with a long face and regular features. The nose is prominent, straight or convex, usually leptorrhine and finely cut. Their eyes are dark. They include the Afghans, Balti, Kashmiri, Kafir, Dardi, Rajput, Panjabi and the Sikhs.⁴⁴

The Armeno-Pamiriensus people live in the Pamirs and in Kashgaria, and include the Galcha, Tajik and Wakhi. They are strongly brachycephalic, leptorrhine and are tall.⁴⁵ The Galcha are of moderate stature and have chestnut hair. The Tajiks are often very tall possibly due in many cases to admixture with Proto-Nordics.⁴⁶ The Western Kurds are dolichocephalic, and more than half are fair with blue eyes. Their heads are becoming shorter and larger, and their hair and eyes darker with the increasing intermixture of Turki or Armenian blood. The Eastern Kurds have a much higher percentage of darker and rounder-headed men and are much uglier.⁴⁷ The Pamiri have brown hair, but is sometimes light. It is always abundant and wavy or curly.

43. Stamp, op. cit., pp. 63-4.

44. Buxton, op. cit., p. 45.

45. Haddon, op. cit., p. 94.

46. Buxton, op. cit., pp. 112-13.

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Their skin is bronzed. Their stature is above the average. They are brachycephalic with a long oval face and a leptorrhine nose. Their eyes are straight and medium in color.⁴⁸

The prevailing races in Baluchistan are the Brahui who are predominant in the east, and the Baluch.⁴⁹

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The Centralis include the Manchus, Transbaikals, Cham-negani, the Southern Tungus, Kirghis and Kara-Kirghis, Buriats, Torgods, Sharra, Taranchi, Kalmucks, Telengets and the Hazara.⁵² They have black hair which is coarse and straight, and very little on the face and body. Their skin varies in color from yellowish to yellowish-brown. They are of medium stature, brachycephalic, with a broad, flattened face with very prominent cheek-bones. The nose is mesorrhine with broad nostrils. Their eyes are dark brown, usually with typically "Mongolian" characters, but they are frequently straight.⁵³ The Telenghites are Mongols from the neighborhood of the Altai. The rest

48. Haddon, op. cit., p. 29.

49. Mill, op. cit., p. 499

50. Haddon, op. cit., p. 94.

51. Buxton, op. cit., p. 46.

52. Haddon, op. cit., p. 95

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of this group is also Mongolian.

The Turki have dark hair and a heavy beard. They have a yellowish-white complexion. Their stature is medium to tall with a tendency toward obesity. They have a cuboid, very brachycephalic high head with an elongated oval face and broad cheekbones. The nose is straight and somewhat prominent. They have dark Mongolian eyes, but often the outer part of the margin of the eyelid is folded. The Kirghiz, Kazaks and Uzbeks belong to this group.⁵⁴

The Southern Mongoloid or Pareoean type has black, lank hair with little on the face or body. Their skin varies from yellow to an olive-brown. They are generally short, often thickset. Their face is broad with the cheekbones often laterally enlarged. The nose is short and flattened with broad nostrils. The eyes are often oblique with the epicanthic fold. This group is considerably mixed with non-Mongolian peoples with whom they came in contact when they moved south.⁵⁵

The Mongols are usually, but not always, distinguished by a high cephalic index. They are of medium stature and have black hair.⁵⁶

The people of Tibet are of Mongolian stock. There are two racial elements, the Pareoean and the other group who are long-headed with nearly regular features with a long, fairly well

54. Ibid., p. 33.

55: Ibid., pp. 34-5

56: Buxton, op. cit., p. 181.

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With the plan outlined and the history, trade routes and anthropology discussed, the author now turns to the physiography and human geography of the deserts and steppes of Asia.

57. Haddon, op. cit., p. 113.

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27. Haddon, op. cit., p. 11.

CHAPTER I

PHYSIOGRAPHY

General Discussion

The heart of Asia is the great Central Asiatic Plateau from which lesser mountain-rimmed tablelands branch off westward into Anatolia and Iran, southwest and southward into Afghanistan and northern India, southeastward into Tibet, eastward and northeastward into China and Mongolia and northward into the steppe country of Siberia.

The Pamir Knot is known as the "roof of the World" because of its mean elevation of 11,000 feet. The Himalayas with the Karakoram Range on the northwest run southward to form the boundary between India and the plateau of Tibet.

The great Mongolian plateau lies north of the Altyn Tagh and Nan Shan mountains. It is 3000 to 4000 feet high, and is separated from Manchuria on the east by the Khingan Mountains, and from Siberia on the north and west by a short series of ranges, the Tien Shan, the Altai and Sayan Mountains. This plateau is divided into the Tarim and Dzungarian Basins in the west and the Gobi Desert in the east.

West of the Pamir Knot the Hindu Kush Mountains stretch across Afghanistan and continue through northern Iran as the Elburz Mountains. Between the Elburz and the broken mountain

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West of the Pamir Knot the Hindu Kush Mountains stretch across Afghanistan and continue through northern Iran as the Elburz Mountains. Between the Elburz and the broken mountain

chains bordering the Arabian Sea and the Persian Gulf are the plateau of Iran and the plateau basins of Afghanistan and Baluchistan. West of the Armenian Knot the Pontic Mountains parallel the coast of the Black Sea; the Taurus Ranges border the coast of the Mediterranean and between them lies the plateau of Anatolia.

This continuous wall of plateaus and mountains completely separates the lowland of northwestern Asia from the plains of the east and south and communication between them is possible only by the mountain passes. These passes are the Khyber, the Bolan, the Karakorum and the Terek.

Russian Turkestan is a region of internal drainage. Much of it was once covered by a great sea of which the Caspian and the Aral Seas and Lake Balkhash are remnants. As they have no outlets, these waters are saline.

The lofty barrier of mountains and plateaus which stretches across Asia has a marked effect on the climate. North of this wall the winters are extremely cold since the influence of the oceans does not penetrate the interior of the continent, and also because the region is one of high pressures and rapid radiation. Conversely, to the south, the climate is hot through being deprived of Arctic winds. The plateau of Arabia, in the subtropical zone, has a hot desert climate, and the high plateaus of central and southwestern Asia have a temperate desert climate. In lofty Tibet, due to the rarity of the atmosphere,

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the ground temperature in the sun may be 130 degrees while it is below freezing in the shade.

In the winter the whole of central and northern Asia is covered by a great blanket of cold air centering over the Gobi Desert and southern Siberia. This heavy, compressed atmosphere flows out in all directions giving rise to cold, dry winds blowing outwards from central Asia. These winds are especially strong over northern China, but are kept out of India by the Himalayas.

In the summer the overheated interior warms the overlying air, causes it to expand and flow up and thus creates a low pressure area which draws in air from the surrounding relatively cooler oceans. The center of lowest pressure is over Baluchistan and the Sind. These monsoon winds bring rain to practically the whole continent. The amount of rainfall differs greatly in different regions. It is low in the heart of Asia as it is kept out by the mountain barrier. On the plateau of Tibet and in western Mongolia the annual rainfall is very small. The steppelands of western Siberia average about ten inches of rain annually. The winters are long and severe; the summers short and warm.

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Geology and its history determine the topography of Asia. Within the continent are several major structural units. The peninsulas of Arabia and India are underlain by an ancient and massive complex of highly folded Pre-Cambrian rocks. These stable, positive areas are part of the ancient continent of Gondawaland, and are now locally veneered with young sediments. The other stable area in Asia lies north and east of Lake Baikal and is known as Angaraland or the Aldan shield.

Between these resistant blocks is a succession of east-west folded ranges. During much of the Paleozoic and Mesozoic era this was the site of a great sea known as Tethys. Sediments accumulated in this geosyncline, and mountain building occurred at the close of the Mesozoic and especially in the Cenozoic era. Pressures came from the north.⁵⁸

For the sake of convenience the regional discussion will be divided so as to group the various countries into areas that naturally fit together.

58. Cressy, op. cit., pp. 15-20.

59. W. D. Randall, The Climates of the Continents, 1922.

60. Cressy, op. cit., p. 383.

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Regional Discussion

The countries of southwestern Asia are in part made up of deserts and steppes. As this thesis is only concerned with Asia's deserts and steppes, they are the only parts of the various countries that will be discussed here.

The climate of the area is Mediterranean. The prevailing winds blow from the north all year; from the northwest in summer and northeast in winter. They are controlled in summer by the low pressure systems which develop over southern Asia. In winter they are the outflow from the center of high pressure over central Asia. The summers are very hot and the winters are cool and cold. The rain is scanty and falls entirely in the winter. The summer months are very fine, hot during the day and comfortably cool at night. The air is dry and the sky almost cloudless. The winters are cool considering the latitude, and the temperatures are frequently below freezing during the night. The area is dry and there are therefore elaborate irrigation works.⁵⁹

The steppeland of Anatolia is a rolling country of withering rivers and barren plains. It includes salt lakes and play~~a~~ flats interrupted by low ranges.⁶⁰ The area is one of interior drainage into the shallow red-lined lakes and salty playas, but

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a few streams manage to break through the mountains.⁶¹ The steppe lies between Ankara and Konya and southwest of Erzurum.⁶² The area has a Mediterranean climate. The bitterly cold north-east winds in winter and spring bring freezing temperatures, and there is also a light snow cover in winter. The summers are hot with severe dust storms. The high summer temperatures develop semi-permanent low pressure areas with inblowing winds and no rain.⁶³

The Syrian Desert is an extensive plateau lying east of the Dead Sea and is 500 to 600 miles wide. The prevailing rock is limestone. This desert plateau is known as et-Tih.⁶⁴ The rainfall is insignificant in the desert. El Ghor, the valley of the Jordan and the Dead Sea, is arid, but the plateau east of this depression is elevated enough to derive some moisture from the winds which have crossed Judea. East of this area the rainfall decreases with decreasing altitude to the deserts of Syria and Arabia.⁶⁵

The desert area in Palestine is the Jordan Rift Valley. The rainfall is very slight around the Dead Sea. The vegetation in the south is therefore of the desert type, and the quantity of salt in the soil accentuates the aridity.⁶⁶

61. Ibid., p. 388.

62. Buxton, op. cit., p. 86.

63. Cressy, op. cit., p. 388.

64. Mill, op. cit., p. 449.

65. Kendrew, op. cit., p. 152.

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The desert of Arabia is practically a continuation of the Sahara and has the same characteristic date palm oases. The people show a marked similarity to the peoples of North Africa without, apparently, any Negroid affinities.⁶⁷ This area is also a continuation of the Syrian Desert.

The deserts stretch as a great semicircle around the heart of the peninsula. The southern coasts are completely cut off from the heart of Arabia by the Dahna and Nefud in the east and the Ahqaf in the west. Nejd is cut off from the Persian Gulf by a tongue of desert which stretches north from the areas just mentioned. The Syrian Desert is separated from the Arabian by the Nefud.⁶⁸ There are two areas of sandy desert, the Rub al Khali in the southeast and the Nefud in the center. These are connected by a narrow strip of sand in the east called the Dahna. They are areas of deflation hollows wind-scoured in the underlying sandstone and have exceptionally large dunes. After the winter rains there is usually enough vegetation for some grazing. The Dahna has a surface of red sandstone which extends from Nejd to Hadhramaut and Mahrahim in the south, and from Yemem to Oman. This is the Rub al Khali.⁶⁹ This section is a comparatively hard gravel plain, and is covered at intervals with sand belts of varying width. There may be underground

67. Buxton, op. cit., p. 41.

68. Stamp, op. cit., pp. 136-7.

69. Hitti, op. cit., p. 15.

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67. Burton, op. cit., p. 41.
68. Stamp, op. cit., pp. 136-7.
69. Hitti, op. cit., p. 12.

water present at a depth.⁷⁰ The area covers 50,000 square miles, and is a good section for camel pasture. The name Rub al Khali means "The Abode of Emptiness". The Nefud is a continuous area of deep gravel or sand formed by wind action into high dunes.⁷¹ This is a difficult section to cross due to the lack of water and the *simûm*, a circular storm of heated, sand-laden air that moves in the manner of a cyclone.⁷² The southwest-northeast routes across this section are determined by the general water system. The Ahqaf is a very soft dune country and can only be crossed in narrow belts due to the extreme physical labor involved.⁷³ It is a soft sand area and makes a barrier between Nejd and Yemen. The Harrah is the name given to the tract of rough lava surface. This lava is corrugated and fissured and overlies the sandstone.⁷⁴ There are broad, well-cultivated valleys in this section.⁷⁵

The rest of Arabia is an area of dry steppes or steppe-deserts. These are vast tracts with a hard or dusty surface which is either level or undulating. There are occasional natural waterholes and a permanent coarse vegetation in the hollows.⁷⁶

70. Stamp, op. cit., p. 135.

71. Ibid., p. 135.

72. Ibid., p. 456.

73. Lyde, op. cit., p. 316.

74. Hitti, op. cit., p. 17.

75. Mill, op. cit., p. 456.

76. Stamp, op. cit., p. 137.

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 76. Stamp, op. cit., p. 137.

Underlying the whole peninsula with the exception of Oman is a great complex of crystalline Archean rocks. These are exposed over large areas in Hejaz, along the Red Sea coast, and in the center of the country. Toward the north and northeast there are great areas of slightly folded Cretaceous limestones over the Archean. The lavas are Tertiary.⁷⁷ The area has a general slope from the southwest to the northeast and drains normally with the slope.⁷⁸

Arabia owes its rainlessness to its location in a high pressure belt, and also to the encircling mountains which cut off any moisture that might reach the interior.

The bordering steppe supports a considerable pastoral population.

There are two areas of oases and cultivated land. One is in the heart of the country surrounded by the desert. There are three groups of more or less connected oases, the Jebel Shammar, the Qasim and the Nejd. The Nejd is an area of long undulating slopes which are covered with pasture, and deep narrow valleys in which there are irrigated gardens and plantations. The Jebel Shammar receives the drainage from two mountain ranges and includes the towns of Hail and Feid. The Qasim owes its fertility to the constant groundwater from the great Wadi Rumamah, and includes the large settlements of Aneizah, and

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Boreidah, the largest and most commercial towns of central Arabia, and about fifty other settlements.⁷⁹ The other area of oases is along the coasts and desert margins. They are most important in Yemen and in the southeast. In the east along the shores of the Gulf of Oman is the fertile area known as the Batinah of Oman. From here on east the south coast is almost entirely desert to Longitude 50°. Then it becomes fertile in patches and the vegetation runs inland up the valleys and onto the plateau. In Yemen, along the southern shores of the Red Sea, there is a low coastal strip which is fertile where the wadis reach the shore. The slopes behind this section are also fertile due to the monsoon rains which strike them. Going north along the Red Sea the fertile areas become fewer.⁸⁰ The oases of Arabia are all actually or relatively small. The water supply is often connected with a wadi whether or not it has surface water.⁸¹ Many of the oases along the wadis have small irrigated fields with the water supplied from wells.⁸² In the hammada water is collected in clay-lined reservoirs between November and May.⁸³

Southern Asia is divided into Iraq, Iran, Afghanistan, Baluchistan, and in order to include desert area, northwestern India.

79. Stamp, op. cit., p. 137.

80. Ibid., p. 137.

81. Cressy, op. cit., p. 325.

82. Ibid., p. 397.

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Upper Iraq is an open, undulating treeless plain with level areas in some places and ranges of low hills in others. The cultivated land is restricted to the deep broad valleys of the Euphrates and Tigris rivers, and the Great and Little Zab which are tributaries of the latter. Lower Iraq is almost entirely level, and has a gentle slope toward the Persian Gulf. The soil is a fine, fertile alluvium. The borders of the desert fringe are hard gravelly plains with patches of sand, and there is frequently a scarp between 50 and 100 feet high which clearly marks the beginning of the Tigris-Euphrates plains.⁸⁴ The desert is brown and lifeless during most of the year except for a few weeks after the winter rains.⁸⁵ Rainfall is scanty -- not over ten inches -- and all of it falls during the winter months. This rain is largely the result of passing cyclonic storms. Where the Mediterranean moisture reaches the northern part of the country there is steppe grassland.⁸⁶ May to October are practically rainless at Baghdad. These months are marked by a period of intense heat, cloudless skies and very dry air. In March and April the rivers are in heavy flood, and are lowest during August and September.⁸⁷ The temperatures in summer are frequently over 100 degrees.

84. Stamp, op. cit., p. 143.

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The Tigris and Euphrates rivers flow across a desert to a growing delta. The lands on either side of the rivers are capable of easy irrigation because irrigation canals are easy to construct. In the north the rivers flow in normal valleys and therefore diversion canals are less easily constructed and irrigation is on a small scale.⁸⁸ After the Mongol invasions the early irrigation systems collapsed, and not until comparatively modern times were efforts made by the Turks to prevent flooding and to secure the services of engineers to study and undertake irrigation works.⁸⁹ In 1917 an Agricultural Development Scheme was put forth. It was a "plan to complete canals left half-finished by the Turks, dig new ones, improve old ones, to import and advance to the cultivators plough-cattle and seeds".⁹⁰ Without irrigation the land would only be poor steppe fit only for sheep.

Iran is an upland country stretching from Kurdistan to Afghanistan. Ancient Persia extended from the Mediterranean to the Indus, and from the Jaxartes (Sir Darya) to the Arabian Sea.⁹¹ Iran is an elevated tableland with mountains in the north. One-third of the area is desert and saline wastes which are irreclaimable and useless. The interior is divided by low ranges into a series of enclosures, and the largest of these

88. Cressy, op. cit., p. 401.

89. P. W. Ireland, Iraq, 1938, p. 120.

90. Ibid., p. 121.

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interior basins is Seistan. There are huge alluvial fans around the dissected mountains as the runoff is inadequate. In the Lut Desert there are exceptionally large dunes some of which are 700 feet high. This area is so dry that there are no erosion channels. Most of Iran is a boulder-strewn and wind-swept desert, and nearly two-thirds is so dry that no drainage escapes to the sea. After the winter rains there may be a carpet of short grass and bright flowers.⁹² The coastal strip is narrow and barren except in a few places where there is sufficient water available to make possible crop irrigation.⁹³

Iran lies in the Alpine fold belt. The plains are composed of horizontal or slightly folded sandstones, limestones and chalks which are Tertiary and Cretaceous in age. The border ranges are highly folded, and have cores of ancient gneisses and granites. There is much igneous material, especially in the northwest. The sands and other superficial deposits of the deserts mask their solid geology.⁹⁴

The climate of Iran is more extreme than that of the heart of Asia Minor, especially in the summer. Then the sky is almost cloudless and the air dry and clear, which therefore makes the sun's rays extremely powerful. The mean July temperature at Tehran is 85 degrees. The winters are cold with the

92. Cressy, op. cit., pp. 408-9.

93. Stamp, op. cit., p. 151.

94. Ibid., pp. 155-6.

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mean January temperature slightly above freezing. There is keen frost at night. The winter is the rainy season but the amount of precipitation is insignificant except in the hills where it falls in the form of snow and provides irrigation for the valleys when it melts in the spring. Tehran receives eight inches of rain between November and April, and the other six months are almost rainless. All of the moisture comes from weak cyclonic storms from the west, and its amount and distribution are erratic.⁹⁵ Away from the mountainous rim the center of the plateau is lower and here the aridity is extreme. In the Dasht-i-Lut and Seistan there is almost no rain.⁹⁶

With the exception of the Caspian provinces the entire country depends on irrigation. The system is built around a unique series of tunnels ten to twenty miles long which bring water from distant sources. These tunnels are called kanats or karez, and many of them date back for centuries. The construction of these tunnels usually begins on a gentle slope and gradually works underground in the direction of a dry river bed or alluvial fan where it is hoped to find water. The tunnel is only two or three feet in diameter and slopes just enough to carry the water. At necessary intervals a shaft leads to the surface through which the debris is removed. When the source

95.Cressy, op. cit., p. 409.

96.Kendrew, op. cit., p. 151.

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only two or three feet in diameter and slopes just enough to
carry the water. At necessary intervals a shaft leads to the
surface through which the earth is removed. When the source

of water is reached, lateral tunnels are dug to increase the collection. There are many villages lined up along these underground streams with wells every 20 yards. As many as 1000 wells may tap the same tunnel. Where the kanat comes to the surface the stream is divided into irrigation ditches. These elaborate systems are expensive, and require frequent attention. Where they fall into disrepair several villages and extensive fields may have to be abandoned.⁹⁷

Afghanistan is the eastern part of the Iranian plateau. It is a difficult land to enter, and in the southwest the desert area is swept by a deadly hot wind. This area in the southwest is made up of the deserts of Registan and Seistan which cover a fourth of the country.⁹⁸ In general, patches of fertile land may be found in some of the more favored valleys, and from the point of view of ethnology the contrast in environmental conditions, which varies with altitude, is of great interest.⁹⁹

Between the Indus and the foothills is a strip which varies from 200 miles to almost nothing. This area is extremely arid though it is intensely cultivated where there is water. The vegetation decreases from the south to the north and as the hills are approached the land is stone and bare rock.

There are six physiographic regions. The first is Afghan

97. Cressy, op. cit., pp. 409-11.

98. Ibid., p. 413., p. 413.

99. Buxton, op. cit., p. 108.

of water is reached, lateral tunnels are dug to increase the collection. There are many villages lined up along these underground streams with wells every 30 yards. As many as 1000 wells may tap the same tunnel. Where the kanat comes to the surface the stream is divided into irrigation ditches. These elaborate systems are expensive, and require frequent attention. Where they fall into disrepair several villages and extensive fields may have to be abandoned.⁹⁷

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Turkestan or Bactria. This is a low plain between the valley of the Amu Darya and the mountains to the south. The rivers lose themselves in sand before they reach the Amu Darya. The former irrigation works are deserted, and the tract is unhealthy and sparsely inhabited. Mazar-i-Sharif is the principal town. The second division is the Hindu Kush, and the third is Badakhshan which is in the northeast. The latter area includes the Little Pamirs and is completely isolated in the south by the Hindu Kush. The valleys are cultivated or are inhabited by shepherds with their flocks. Kabulistan is the fourth region, and is a series of alluvial plains around the capital, watered by the Kabul River and its tributaries. It is the richest and most densely populated area. Hazara is the fifth region. It is mountainous, comparatively well watered and sparsely peopled by immigrant Mongols. The last division is the deserts of the south and west. The valley of the Helmand River makes a green strip of fertile land separating Seistan from Registan. These areas are torrid sand-covered wastes which are crossed with difficulty by nomadic Baluchis and their camel caravans. Once this area was irrigated and prosperous.¹⁰⁰ Seistan covers 125,000 square miles, and has three subsidiary basins. The first consists of a two-fold lagoon formed by the Harud and Farah rivers which flow in from the north and by the Helmand and Khash which flow in from the south and east. The second

100. Stamp, op. cit., pp. 161-2.

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basin is the Hamun Lake which is a seasonal phenomenon. It is 100 miles long and 15 miles wide. The last basin is the Gaudi-Zirreh.¹⁰¹

With the exception of the Kabul and its tributaries all of the rivers drain into inland basins. The most important rivers are the Amu Darya, the Murghab, and the Hari-Rud which waters the fertile plain of Herat before disappearing in the oasis of Tejend. The Helmand is the longest river and crosses Hazara and the southwest deserts and then empties into Hamun Lake in the center of Seistan. This river may be compared to the Nile.¹⁰² Nearly all of the small rivers have dry watercourses for three-fourths of the year.

Afghanistan has the easternmost limit of the Mediterranean climate, but this winter rain is very low. The monsoon climate of southeastern Asia has a slight influence here. At Quetta it provides a second maximum rainfall in July.¹⁰³ The desert areas have a mild winter and a very hot summer. In the winter they receive three inches of rain.¹⁰⁴

Irrigation in this area is by means of wells, small streams and karez. In the Yulatan oasis the water is drawn from a huge dam, the Band-i-Kazakli. This water is drawn from the Murghab by a canal. In the Pendjeh oasis the agriculture is confined

101. A. Hamilton, Afghanistan, 1910, pp. 171-2.

102. Ibid., p. 180.

103. Kendrew, op. cit., p. 152.

104. Stamp, op. cit., p. 163.

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102. *Ibid.*, p. 180.

103. Kewenew, *op. cit.*, p. 152.

104. Stamp, *op. cit.*, p. 163.

to the limits of a single valley 25 miles long and 2 miles wide.¹⁰⁵

Baluchistan is an arid plateau, 1000 to 3000 feet high and surrounded by mountains. It is a land of interior drainage and withering rivers which descend from the barren mountains over great alluvial fans which testify to the aridity.¹⁰⁶

There are no large rivers to use for irrigation purposes. The streams are short, rushing torrents after rains, and are then dry for many months. Most of them drain into shallow lakes which dry up entirely during the hot weather.¹⁰⁷ The vegetation is partly true desert and partly marginal steppe type. A considerable part of the country is entirely desert, and none but a comparatively small tract along the Sind border and a few valleys in the northeast are sufficiently watered to produce more than a scanty crop of grain or a little fruit.¹⁰⁸

Irrigation in this country is by means of karez which have been driven into the gravel fans for water to irrigate the lower flood plains.

In northwestern India there are two desert regions, the Sind and the Thar desert. The Sind is a broad, dry, alluvial plain which stretches from the edge of the Baluchistan plateau (the Kirthar Range) to the Thar Desert. The Indus flows through

105. Hamilton, op. cit., pp. 133-4.

106. Cressy, op. cit., p. 471.

107. Stamp, op. cit., p. 279.

108. Mill, op. cit., pp. 281-4.

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 106. Greasy, *op. cit.*, p. 471.
 107. Stamp, *op. cit.*, p. 279.
 108. Mill, *op. cit.*, pp. 281-4.

the center. Over a considerable part the rainfall is less than five inches. Agriculture depends on irrigations and until recently was by means of irrigation canals. Away from the irrigated areas the Sind is a barren desert. Here and there are the remains of canals which are no longer in use and cities long since deserted. There are deep, dry valleys which were once occupied by the Indus.¹⁰⁹

The Thar Desert lies between the Indus Valley and the Aravalli Range. This is a northwest sloping area from the mountains in Rajputana Province and parts of the Punjab and Sind. It consists of a sandy waste interrupted by rocky hills and waterless valleys. The ground is often entirely bare. In some places there may be a few shrubs or plants with thick, fleshy leaves or stems which can store water or with long roots which can tap the moisture.¹¹⁰ There are occasional shallow playa lakes, the most important of which is Lake Sambhar. It covers 90 square miles and has a maximum depth of four feet after the occasional rains, and at other seasons it is largely a dry sand flat.¹¹¹ The rainfall is generally under ten inches, and since there is little possibility of irrigation most of the area is a desolate waste covered with shifting sands or scattered brush. There are older rock hill projecting here and

109. Stamp, op. cit., pp. 281-4.

110. Ibid., pp. 340-1.

111. Cressy, op. cit., p. 470.

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there above the undulating surface. The skies are cloudless in spite of the low pressure and the nearness to the sea. The winds from the east are dry as the monsoon has lost all of its moisture coming up the Ganges Valley. In the north and west the mountain barriers keep out the surface winds. In the south, winds enter the Sind with a relative humidity of 80%, but the high surface temperatures reduce this to 55% in the interior. The convectional rise to 3000 feet would give rain, but before this elevation is reached the surface air mixes with dry air masses from the west and therefore cloud formation is prevented. Thus the sun directly overhead shines without interruption and heats the surface further lowering the relative humidity.¹¹² The Thar remains a desert because of the absence of water for irrigation and the absence of level land which could be irrigated.

Mongolia surrounds the Gobi Desert. There are four political subdivisions: Inner Mongolia between the Gobi and the Great Wall, Outer Mongolia between the Gobi and the Altai, the country around Koko Nor, and the Dependencies of Uliassutai.¹¹³ In general it is a wide plateau which in places is waterless. Much of it is tableland at an elevation of 3000 to 5000 feet. It is made up of a central core of poor steppe or desert with a grass steppe surrounding it. The area immediately north of

112. Ibid., p. 468.

113. H. Lansdell, Chinese Central Asia, 1893, p. 161.

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the Eighteen Provinces, Inner Mongolia, is divided politically into the new provinces of Jehol, Chahar, Suiyian, and Ninghsia. Much of this area is only sem-arid and is a transition zone between the lands to the south and the Gobi. The Gobi and the adjacent Ordos Desert are for the most part rocky, sandy or gravelly wastes crossed by low mountains and hills. Northward and westward, mountains occupy much of Outer Mongolia. A good deal of this outer area has grazing land, and parts of it are fairly well watered by the rivers.¹¹⁴ Northwest Mongolia is surrounded by mountains and makes the basin of the upper Yensei.¹¹⁵ The rest of the area is gravel steppe.

The Gobi Desert occupies the center of the country. It is essentially a rock desert with a thin veneer of shifting sand and much bare rock.¹¹⁶ The Black Gobi lies west of the Edsin Gol, and is made up of black gravel. The flat fragments of black gravel are like shattered slate in formation and are laid thickly over a yellow sandy clay of unknown depth.¹¹⁷ Inner Mongolia has two subdivisions. The first is the Ala Shan, a barren bare land of shingle, sand and salty clay. It lies between the Edsin Gol valley and the bend of the Hwang Ho.¹¹⁸ The other division is the Ordos Desert which is east of the river but

114. K.S. Latourette, The Chinese, Their History and Culture, 1934. p. 17.

115. L.H.D. Buxton, China, 1929, p. 198.

116. R.C. Andrews, This Business of Exploring, 1935, p. 282.

117. Lattimore, op. cit., p. 215.

118. Lattimore, Inner Asian Frontiers of China, p. 201.

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within the bend. It is a level area bordered by low, sandy hills. The northern part is made up of sand dunes.¹¹⁹

Beneath the plateau is an enormous granite batholith. This area was not covered by the ice sheet during Pleistocene times but only by local glaciers. It is the oldest continuously dry land in the world. The valleys of the Gobi region were occupied by man immediately after the close of the glacial period.¹²⁰

Central Mongolia has been arid and semi-arid in its climatic habit for many millions of years, but there have been cycles of greater or less aridity.¹²¹ The region for the most part is sufficiently moistened by summer rains to produce a fair amount of pasture and fodder shrubs for sheep, horses and camels.¹²²

Sinkiang has been closely linked with China since the time of the Han Dynasty when there was a great silk traffic through the Central Asian deserts. The area of this province is 400,000 square miles. In the west it is 4000 feet high and the elevation decreases toward the east until the Turfan area is below sea level. The physical boundaries are very definite; to the north the Tien Shan Mountains, to the west the Kizil Art, in the south the Karakorum and Kunlun Mountains, and in the east

119. Buxton, op. cit., p. 201.

120. Andrews, op. cit., pp. 281-2.

121. Loc. Sit.

122. Mill, op. cit., p. 539.

the Gobi Desert. Sinkiang is a land of oases. Most of the plains are too dry for grazing. Wherever semi-permanent streams descend from the highlands there are irrigation ditches which spread water over the alluvial fans. Each such oasis commands a bit of desert and is an irregular area with a principal city, barren foothills and well-watered mountain valleys upstream. Each settlement is largely independent of the others.

The principal stream is the Tarim and there is almost no cultivation along its banks. This river rises in the glaciers of the Karakorum Mountains to the southwest where it is known as the Raskum Darya. Then it is known as the Yarkand Darya until it skirts the edge of the Takla Makan Desert and becomes the Tarim. It waters the country between the Karakorum range and Yarkand and Aqsu to the northeast. It flows finally into the Lop Nor marshes. The character of the country through which it flows is an accumulation of sand drift, and the only habitable portions are along the river banks.¹²³

Sinkiang is divided by the Tien Shan Range. The interior of the country is a continuous succession of sand dunes moving slowly to the west. These have, in the course of ages, overwhelmed ancient cities the ruins of which yield relics of ancient civilizations.

This area may be divided into six regions. The first is Hami which is a plateau 4000 feet high. The lowlands are a

123. Etherton, op. cit., p. 143.

gravel or sandy waste. Turfan is a depression 300 feet below sea level. The central desert, the Takla Makan, is surrounded first by a fertile zone where the oases are, and then by a zone of piedmont gravels.¹²⁴ The desert plain is bare and lifeless, and is bounded on the north by red and yellow hills.¹²⁵ These mountains in the north are known as the Bogdo Range and are the eastern end of the Tien Shan. The base is buried in a piedmont gravel deposit. An east-west fault runs through the basin parallel to the range and 30 miles to the south. The northern side of the fault is a low range of bright red sandstone known to the Chinese as the "Fire Mountains". South of the fault is a salt playa and the area then rises again into the mountains. Huntington has found evidences here of climatic change.¹²⁶ The fourth area is the Takla Makan Desert. It is 500 miles long, and the greatest width is 250 miles. It is an area of monstrous sand hills which overlies ruins of great cities and dense forests.¹²⁷ The desert is the result of its location in relation to relief. It is 1500 miles from the nearest sea. The dunes are built up by the violent northeast wind which blows in the gate between the Pie Shan and the Nan Shan Mountains and the dunes are highest in the southeast.¹²⁸ The area is

124. Buxton, op. cit., pp. 203-4.

125. Teichman, op. cit., p. 120.

126. E. Huntington, The Pulse of Asia, 1907, pp. 306-8.

127. Sykes, op. cit., p. 236.

128. Lyde, op. cit., p. 78.

extremely arid and has no true pasture land. It has inland drainage and none of the rivers that flow in escape to the east. The rivers from the north, south and west either reach or attempt to reach the Tarim. The streams from the Tien Shan have to cut their way through a barren foothill range to reach the flat, open desert. This drainage pattern provides an east-west series of points at which the river water can be taken off in channels and then spread out fanwise for irrigation.¹²⁹ The last two regions are Ili and Dzungaria. The Ili Valley is enclosed between the two arms of the Tien Shan and is open toward the Kazakistan Soviet Socialist Republic. It is a rich area. Dzungaria is a steppe country between the Tien Shan and the Altai Mountains. The area is named from the Jungar or Western Mongols.¹³⁰ The country is open on the east toward Mongolia, and is shut in elsewhere by mountains, but there are a number of gaps leading into the steppes of Russian Turkestan. The northern part is made up of treeless stoney plains and the wells are brackish. In the south and west there are rich meadows and pasture land.¹³¹ There is no unifying river and the sand dunes are less developed than in the Takla Makan. The longest stream is the Manas which sometimes reaches its terminal lake of Telli Nor. The rivers of the northern slopes do not combine into one

129. Lattimore, op. cit., p. 152.

130. Haydon, op. cit., p. 103.

131. Buxton, op. cit., p. 204.

system. Some vanish into the desert and others discharge into separate lakes. On the southern side of the Altai many small streams lead down into the depression but do not flow far out into it.¹³² An important belt of grazing land follows the northern edge of the Tien Shan, and a much richer belt of steppe borders the southern edge of the Altai. These pastures make continuous nomadic movement possible both east and west. The rivers on the northern side of the Tien Shan can support a series of irrigated oases among which are Wusu, Manas, Tihwa, Kuchengtze and Barkol. These have been dominated in history by a wide movement of pastoral nomads. There are no important oases along the Altai where the more abundant grassland changes the economy from irrigated agriculture to pastoralism.¹³³ The climate of Sinkiang depends on a three-fold fact: that the area is in the middle of the temperate zone; that it is in the center of the largest continent; and that it is in the middle of a lofty ring of mountains which almost completely enclose it. Therefore the rainfall is minimized and there are great extremes of temperature.¹³⁴ The climate is intensely continental. At Kashgar the mean maximum for summer is 90 degrees, and the winter mean maximum is 38 degrees. It is dry in winter and therefore the cold is not severely felt. The coldest inhabited

132. Lattimore, op. cit., p. 153.

133. Loc cit.

134. Huntington, op. cit., p. 93.

spot is Barkul, and the hottest Turfan.¹³⁵ The rainfall averages 3.34 inches. It is distributed throughout the year and is irregular. The springs are windy and are marked by dust storms from the west.¹³⁶ In Dzungaria the desert regime is not so rigid as in the Takla Makan. The summer rainfall is greater and more regular, and is able to support a more or less continuous belt of pasture along the mountain bases.

The irrigation in Sinkiang depends on a full river, and the snowfall affects the amount of water. The irrigated areas lie at the base of the mountains in a somewhat sloping zone of gravel which is a characteristic piedmont deposit forming a peripheral ring 5 to 40 miles wide. Beyond this area lies the vast inner plain of sand and clay.¹³⁷ The rivers break through the lower desert barrier range to enter the flat country. Here they tend naturally to break up into several channels and in the season of high water they spill over into lakes and marshes.¹³⁸ For irrigation purposes the rivers are all taken at the point where they issue from the mountains and are divided into main streams which are then split into channels and minor channels at the different villages where the water is diverted onto the land.¹³⁹ Irrigation is by means of karez.

135. Buxton, The Peoples of Asia, p. 169.

136. Sykes, op. cit., p. 239.

137. Huntington, op. cit., p. 100.

138. Lattimore, op. cit., p. 155.

139. Etherton, op. cit., p. 45.

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135. Buxton, *The Peoples of Asia*, p. 169.
 136. Sykes, *op. cit.*, p. 439.
 137. Huntington, *op. cit.*, p. 100.
 138. Latham, *op. cit.*, p. 155.
 139. Latham, *op. cit.*, p. 45.

At the fault in the Turfan Depression the water from the high mountains reappears from under the gravel and flows through the gorges in the red hills into the depression. The water of each stream is dispersed over the plain by means of ditches, while between the streams and beyond the limit to which their water can be carried the farmers depend on karez. Beyond the limit of karez irrigation the bottom of the depression is too saline and swampy for human habitation.¹⁴⁰ The oases of Sinkiang cover less than one and one half per cent of the total area, and are generally separated by miles of desert.¹⁴¹ In these oases the water is more easily accessible than in many of the oases of Arabia and North Africa where it can only be obtained from deep wells.¹⁴²

Tibet stands as an area alone in Asia. It is an area of extensive, mountain-traversed high plains from 14,000 to 17,000 feet high in the west and 9000 to 14,000 feet in the east. The northern plain is known as the Chang Tang, and it extends to the foot of the Kunlun. Most of this area is too high for permanent habitation, but the easternmost edge is peopled by the Black Tent nomads.¹⁴³ The area is a buran-swept desert with an average elevation of 16,000 feet. It is made up of a series

140. Lattimore, High Tartary, 1930, p. 156.

141. Sykes, op. cit., p. 237.

142. Lattimore, Inner Asian Frontiers of China, p. 155.

143. Buxton, op. cit., p. 167.

At the fault in the Turan Depression the water from the high mountains reappears from under the gravel and flows through the gorges in the red hills into the depression. The water of each stream is dispersed over the plain by means of ditches, while between the streams and beyond the limit to which their water can be carried the farmers depend on karez. Beyond the limit of karez irrigation the bottom of the depression is too saline and swampy for human habitation.¹⁴⁰ The oases of Sinkiang cover less than one and one half per cent of the total area, and are generally separated by miles of desert.¹⁴¹ In these oases the water is more easily accessible than in many of the oases of Arabia and North Africa where it can only be obtained from deep wells.¹⁴²

Tibet stands as an area alone in Asia. It is an area of extensive, mountain-traversed high plains from 14,000 to 17,000 feet high in the west and 9000 to 14,000 feet in the east. The northern plain is known as the Chang Tang, and it extends to the foot of the Kunlun. Most of this area is too high for permanent habitation, but the easternmost edge is peopled by the Black Tent nomads.¹⁴³ The area is a barren-swept desert with an average elevation of 16,000 feet. It is made up of a series

140. Lattimore, Inner Asia, 1930, p. 150.
 141. Sykes, op. cit., p. 237.
 142. Lattimore, Inner Asia, 1930, p. 155.
 143. Burton, op. cit., p. 107.

of wide, shallow valleys with the drainage collecting on the valley floors in innumerable lakes. These lakes have no outlet and the water is saline. Around the shores there are thick deposits of potash, borax and soda.¹⁴⁴ The cold is intense, and there is a great range and an extreme contract in the temperature.¹⁴⁵ The center of the country is also a land of great height, in parts mountainous, level or undulating. It varies in climate from arid to sub-arid.¹⁴⁶

Soviet Central Asia has both desert and steppe areas. Geomorphologically the area may be divided into five regions, the first of which is the Ust Urt plateau which is between 500 and 600 feet above sea level. It is formed of horizontal Tertiary rocks, and is separated from the Aral and Caspian seas by sharp escarpments. In the spring after the winter snows have melted and after the spring rains, there is a sparse covering of vegetation which rapidly disappears.¹⁴⁷ The second region is the Kara Kum Desert which lies south and southeast of the plateau and stretches almost to the Persian and Afghan frontiers and from the Caspian to the Amu Darya. It is an irregular plain covered with shifting sands which form into horseshoe-shaped dunes 15 to 40 feet high which tend to become gradually fixed

144. C. Bell, The People of Tibet, 1928, p. 3.

145. Lyde, op. cit., p. 67.

146. Lattimore, op. cit., p. 207.

147. Stamp, op. cit., p. 682.

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by vegetation. This forms a poor type of steppe unless it is destroyed by grazing animals. There are also clayey depressions called takyrs with salt efflorescences and almost without vegetation.¹⁴⁸ It is covered by deposits from the recently dried up waters of the Aral-Caspian Sea.¹⁴⁹ The third region is the southern borderland along the frontiers of Persia and Afghanistan. Where the surface begins to rise from the Kara Kum to the mountains of Kopet-Dagh there are fertile loess soils and a little vegetation. The oases are located where the streams descend from the mountains. The quantity of water for these oases is small. Along 300 miles of the Trans-Caspian Railroad there are only 27 springs of any size, and all the water is absorbed in the irrigation of fields and gardens. In the neighborhood of the Tejend and Murghab Rivers the grazing steppes are more extensive and larger areas are irrigated.¹⁵⁰ The final region is the Kysyl Kum Desert which lies between the Amu Darya and Sir Darya to the southeast of the Aral Sea. This area is more varied than the Kara Kum with small mountain ranges and stretches of grassy steppe.¹⁵¹ The last region is the Fergana Plain. This is a small oval-shaped area with its long axis running east-west. It is almost completely surrounded by mountains. The snows of these mountains furnish abundant

148. Ibid., pp. 682-3.

149. G.F. Wright, Asiatic Russia, p. 375.

150. Stamp, op. cit., p. 683.

151. Loc. cit.

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148. *Ibid.*, pp. 682-3.
 149. G. F. Wright, *Asiatic Russia*, p. 375.
 150. *Stamp*, op. cit., p. 682.
 151. *loc. cit.*

water and the area is one of the most flourishing regions of Turkestan and is the center of cotton cultivation. It is watered by the Kara Darya which flows in from the east and by the Naryn from the northeast; the two streams uniting to form the Sir Darya.¹⁵²

The mountain border of the Central Asiatic Plateau extends from the southern end of the Caspian Sea through the Hindu Kush, the Tien Shan, Altai, Sayan, Yablonoi, and Stanovoi Ranges, and is made up of Archean or Paleozoic rocks though its elevation to its present altitudes took place mostly in Tertiary times. Between the high elevations there are sedimentary rocks which are Silurian, Devonian and Carboniferous in age. These formations lie from 10,000 to 15,000 feet above sea level and are deeply eroded. The river valleys of the lower levels around the margins of the plateau are occupied by coal-bearing strata of Jurassic and Tertiary age.¹⁵³

The streams of the Aral-Caspian Depression all empty into lakes which have no outlet or finally waste their waters in the desert sands. The Tejend waters the plains of Herat, The Murghab rises in northern Afghanistan and ends in the Merv oasis which formerly supported an immense population. This oasis has hot, oppressive summers with dust storms. The winters are exceptionally pleasant. A large area extending west

152. Ibid., p. 684.

153. Wright, op. cit., pp. 485-6.

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¹⁵² Ibid., p. 684.
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from Merv toward the Tejend is covered with broken-down irrigation ditches which could restore the oasis.¹⁵⁴ The Amu Darya rises in the Pamirs, crosses the desert and empties by several mouths into the Aral Sea.¹⁵⁵ The Zerafshan is a tributary of the Amu Darya and its water is absorbed to irrigate Samarkand and Bukhara. The former is irrigated by canals and Bukhara by the lower course of the river. The river finally ends up in various small lakes.¹⁵⁶ The Sir Darya waters the Fergana Valley. This section seems to be a dried-up lake basin as it is covered by a fertile loamy sediment for 160 miles. Irrigation makes it the richest garden spot of Central Asia. The total width of the valley is 65 miles. The chief cities are Kokand, Margelan, Namangan, Andizhan, Usgent and Ush. The chief tributaries for irrigation purposes are the Chirchik and Keles Rivers which water Tashkent. The Tales River ends in a number of small lakes surrounded by sandy waste.¹⁵⁷ The area of the Chu River is called by the Chinese the "Land of the Thousand Springs".¹⁵⁸ The total area of the Aral-Caspian Basin is 2,000,000 square miles.

The oases of Southern Turan stretch from the Caspian Sea to the frontiers of China and from the Pamirs to the borders

154. Ibid., p. 32.

155. Ibid., p. 33.

156. Ibid., pp. 37-9.

157. Ibid., p. 43.

158. Ibid., pp. 42-4.

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154.	<u>Ibid.</u>	p. 35.
155.	<u>Ibid.</u>	p. 33.
156.	<u>Ibid.</u>	pp. 37-9.
157.	<u>Ibid.</u>	p. 43.
158.	<u>Ibid.</u>	pp. 42-4.

of the agricultural land south of the Trans-Siberian Railroad. Much of this area is uninhabitable desert except where the mountain-nourished streams turn the waste into gardens. There are two major geomorphic regions; the Turan Lowland and the Kazakh Upland. There are two geographic regions to be discussed below: the Aral-Balkhash Deserts and the Oases of Southern Turan.

To the north in the Aral-Balkhash Deserts in Kazakhstan there are 5000 lakes many of which are ephemeral. The major water bodies are the Aral Sea and Lake Balkhash. The Kara Kum and Kysyl Kum Deserts are included in this area and lie on either side of the Amu Darya. Some of the shifting sand areas are said to be due to the destruction of the sparse vegetation by overgrazing or by cultivation. The Golodnaya Steppe near the Sir Darya is slightly higher and more moist. The Bedpak Dala or Hunger Steppe lies north of the Chu River. The Semi-reche Steppe is on the south shore of Lake Balkhash. The Kazakh Hills are a peneplained mountain range known as the Kirghiz Steppe. The soil is generally an unleached serozem, a gray desert soil, with local salty or alkaline soils where the ground water is close enough to the surface to permit the evaporation of capillary moisture. Aridity predominates, and the average annual rainfall is eight inches. In some places it is only four inches and where it reaches twelve inches in the north some precarious dry farming is attempted. During the winter

the area is exposed to the cold Siberian air, and the average January temperature is below freezing. In the delta of the Amu Darya the lowest recorded temperature is minus 14 degrees. The summer temperatures are the result of local insolation. The day and night temperatures in July average between 80 and 85 degrees. Many rivers enter the region but only a few have enough water to cross the desert, and those which do, end in salt lakes or playas. These streams lose water, become overloaded with sediment and flow on their floodplains.¹⁵⁹

Turania is an ancient land of great individuality and an unusual history. For thousands of years the struggle against aridity has dominated all the life and has concentrated settlement in the oases. The rainfall is inadequate for agriculture and, therefore, cultivation depends on irrigation from mountain streams fed by melting snow. Each river has its own settlements in the midst of unreclaimed desert. The oases follow the foothills from Merv in the west to Tashkent in the east. Merv is one of the oldest cities in interior Asia. Most of the oases occupy alluvial fans between the mountains and the desert at elevations between 1000 and 1500 feet. Here the rainfall is slightly higher than on the plains and the groundwater is more abundant so there is a thin cover of grass. As dust storms have swept across the desert silt has become trapped in this vegetation. This loess is the basis of an extremely fertile

159. Cressy, op. cit., pp. 350-2.

soil.

The climate is continental, and the range between January and July is over 55 degrees everywhere except at Samarkand. The average July temperature is 89.6 degrees. The nights are cool, The winters are severely cold and a light snow cover persists for a short time. The precipitation is low and erratic. The average rainfall at Tashkent is 14.7 inches, and at Bukhara four inches.

Many of the irrigation works are centuries old and have now been considerably expanded under the Five Year Plans. This is especially true in Ferhana where the water is brought to the dry side of the valley. Some of the ancient canals are Karez.¹⁶⁰ In the Kara Kum Desert, canals and dams were built to bring some life to it. It was found that a few feet beneath the surface the desert soil has enough moisture to maintain life. The "desert planters dig down until fairly deep trenches with sloping sides have been formed. Then, on the bottom, thin layers of humus soil are placed, and in these the crop is planted. The sloping sides prevent sanding and slides, and the depth protects them from excessive heat and frosts".¹⁶¹

The irrigation systems on the Sir Darya are the Dalverzin, Golodno-Steppe and the Chardaryin. The Chouisk system is on the Chu River and the Koum-Kamagan on the Soukhan Darya.

160. Ibid., pp. 346-8.

161. Lengyel, op. cit., p. 372.

On the lower Amu Darya the ancient wooden wheels are being replaced by mechanical irrigation.¹⁶² In 1939 a 150 mile trunk line irrigation canal was built in the Fergana Valley. If the Naryn River were canalized it would make the entire valley fertile.¹⁶³ The irrigation works in Uzbekistan are the Dyz-Ket-Ken Canal which waters 175,000 acres, the 170 mile long Fergana Canal and the Dum-Kurgan system on the Surkan Darya.¹⁶⁴ Turkmenistan has the Volvev and Barsig-Kerkov canals, the Kaus-hut-Bentsky system and the Tashkepru Dam,¹⁶⁵ The irrigated areas of some of the rivers follow:¹⁶⁶

Amu Darya	1,100,000 acres
Zerafshan	980,000 "
Sir Darya	2,190,000 "
Chirchik	480,000 "

The steppes of Siberia extend from 50 to 55 degrees as far east as the Ob. This area is the granary of Siberia. The rainfall is between eight and sixteen inches and falls mainly in the spring and early summer. The prevailing winds are from the northeast and are dry and strong throughout the year reaching gale force in the winter. The springs are warm and the summers hot.¹⁶⁷ Feather grass is the characteristic plant and

162. N. Mikhaylov, Soviet Geography, 1935, p. 128.

163. Mandel, op. cit., p. 124.

164. Davies, Soviet Asia, 1942, p. 139.

165. Ibid., p. 150.

166. Cressy, op. cit., p. 347.

167. Stamp, op. cit., p. 659.

there are also flowering herbs, dwarf thorny bushes and the tamarisk.¹⁶⁸

Thus it may be shown that the steppes and deserts of Asia, from a physiographic point of view, have their disadvantages; and the author now turns to a discussion of how the peoples utilize their environment.

168. Ibid., p. 663.

168. Huntington, The Character of Races, 1927, p. 116.

CHAPTER II

THE PEOPLES OF THE DESERTS AND STEPPES

Nomads

The peoples of the desert and steppe environments are either nomadic or sedentary. With the exception of Soviet Central Asia the majority of them are nomadic.

Almost all the nomads are difficult to rule, and they are often at enmity with the government. When they have made a raid or have otherwise incurred the displeasure of the government officials they can easily slip away into the desert and disappear. They also live in such small groups that it is impossible for the government to maintain officials among them, and they therefore have their own patriarchal form of government and bitterly resent any attempt to force anything else upon them.¹⁶⁹ Nomadic life everywhere is similar. The utensils used by the various ones are all very much alike, and their belongings are all packed in soft bags or small boxes. The encampments are usually small, varying between 12 and 20 tents. There is also a great uniformity in the dominant types of art. They need wooden bowls, skins in which to store milk, bags, saddles, rugs, quilts and similar small, soft and unbreakable articles. Their art therefore turns primarily to the making

169. Huntington, The Character of Races, 1927, p. 116.

of clothing and ornamental rugs and felts for the floors and walls of the tents, ornamental leather work for their bags, saddles and the sides of boxes. All their art and handicraft uses wool or leather as a basic material with wood secondary. The universal trait of the nomad is hospitality. According to Huntington there are four qualities which make the nomad successful. These are the ability to exert himself strenuously and without stint in an emergency; the power of leading; the power of being led; and lastly, self-reliance.¹⁷⁰

In Central Asia the nomads, due to the lack of fixed centers and therefore of rooted interests, have never knit themselves more closely than by grouping into loose associations of tribes and sub clans.¹⁷¹

The life of the nomad breeds in him a feeling of independence and a love of freedom with a resulting contempt for settled occupations especially agriculture. The life breeds a fatalism in the Mongols by producing a powerlessness to ward off drought, tempest or disease among the animals.¹⁷²

There are four causes, according to Lyde, which combine to counteract the general tendency of nomadism. These are that nomad shepherding leads to a patriarchal system of government, that the patriarch is guided by the needs of his animals, the

170. Ibid., pp. 124-8.

171. Lattimore, High Tartary, pp. 241-2.

172. L.W. Lyde, Man in Many Lands, 1925, p. 124.

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170. Ibid., pp. 124-5.
171. Ibid., pp. 121-2.
172. J.W. Lyde, Man in New Lands, 1925, p. 121.

variety of food need by the different animals, and that every shepherding group on the Asiatic steppe has its own traditional and hereditary feeding grounds.¹⁷³

The nomads develop political and social forms, philosophical concepts and emotional attitudes which place the individual at the center not only of society but also of the universe. Their folklore and literature stresses individual prowess, and they put a high value on individual life and on the individual soul.¹⁷⁴

The migration cycle of the nomads is governed partly by geography and partly by social specialization in the use of different animals. There are the groups which move over considerable distances and others that move only a few miles during the year. Some of them have a pastoral range which includes both rich and poor grazing while others never leave the sub-arid steppe or remain entirely in good meadowland.

Central Asia typifies the great geographic type in which topography, vegetation, animal life and human civilization have developed along the lines of prolonged aridity.¹⁷⁵ Here there are two main types of civilization: a nomadism with its independent mode of life due to the scattered state of the sparse population, and an intensive agricultural life in the irrigated

173. Ibid., p. 125.

174. G. Clark, The Great Wall Crumbles, 1935, p. 10.

175. Huntington, The Pulse of Asia, p. 6.

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oases with their centralized mode of life due to the crowding together of populations whose size is directionally proportional to that of the streams. It is here that Huntington finds his evidences for climatic changes, and he says that during the recorded occupation of the country by man, there have been widespread climatic changes. He goes on to say that during the last 2000 years there has been a widespread and pronounced tendency toward aridity. According to him, in the early centuries of the Christian Era there was a rapidly decreasing rainfall and a rising temperature. During the Middle Ages he finds evidence of a slight reversal and of a tendency toward a more abundant rainfall and a lower temperature.¹⁷⁶

Among the human inhabitants of this area widespread poverty, want and depression have been substituted for comparative competence, prosperity and contentment. Disorders, wars and migrations have arisen here. Race has been caused to mix with race under new physical conditions which have given rise to new habits and character. The impulse toward change and migration received in the vast, arid region of Central Asia, has spread eastward and involved all of Europe in the confusion of the Middle Ages.¹⁷⁷

The outlying territories have been the origin of repeated invasions. Except in the occasional oases, the people have been

176. Ibid., pp. 13-14.

177. Ibid., p. 16.

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There is easy access to China from Mongolia and Sinkiang. From the Mongolian plateau there are passes, and from Sinkiang into China there are natural highways which lead into the valley of the Yellow River.

Regional Discussion

The population of Anatolia is partly sedentary and partly nomadic. It is made up of Turks in the cities, widely spread Kurds, Armenians in the towns, and Nestorians near the Persian frontier. There are also Turkomens, Tatars, Avshars and Yuruks.¹⁷⁹

In the Syrian Desert there are nomadic Arabs who sometimes advance as far as Alep, Homs, Damascus and to the Jordan River.¹⁸⁰ There is also a group of Turks of Mongol origin in the eastern part of the country.

The 5,500,000 people of Arabia are divided into 2,500,000 along the Red Sea coasts, 1,500,000 in the rest of the coast settlements, 500,000 in the central oases and 1,000,000

178. Latourette, op. cit., p. 25.

179. Mill, op. cit., p. 442.

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¹⁷⁸ Lecomte, op. cit., p. 45.
¹⁷⁹ Wilf, op. cit., p. 442.

nomads.¹⁸¹ These nomads have influenced the history of not only Arabia but of the world. The philosophic religions of Judaism and Mohammedanism developed here. The Bedouin Arabs are still almost entirely nomadic though a few of the northern tribes practice agriculture, pitching their long black tents among the fields and migrating to mud huts in the winter. The pure Bedouins are tall, well-built men with dark skins, dark piercing eyes and black hair. They are brave, hardy, hospitable, and simple in their habits and food, living on bread, milk, and dates.¹⁸²

The Mediterranean race is the most prominent one in Iraq. In the desert fringes of the southwest and in the plains of Upper Iraq there are nomadic and semi-nomadic Arabs who raise camels, horses, donkeys, sheep and goats. Apart from Persians, Kurds, Turkomans and others on the borders, the population consists almost entirely of Sunni and Shi'ah Arabs.¹⁸³

Iran has 3,000,000 nomads including Arabs, Turks, Kurds, Leks, Baluchis and Lurs.¹⁸⁴

There are several racial divisions in Afghanistan. Among them are Mongols, Turks and Indo-Aryans. Nearly all the people are Mohammedans. The different customs, traditions, languages

180. Ibid., p. 451.

181. Stamp, op. cit., p. 138.

182. Ibid., p. 111.

183. Ibid., p. 147.

184. Ibid., p. 153.

nomads.¹⁸¹ These nomads have influenced the history of not only Arabia but of the world. The philosophic religions of Judaism and Mohammedanism developed here. The Bedouin Arabs are still almost entirely nomadic though a few of the northern tribes practice agriculture, pitching their long black tents among the fields and migrating to and fro in the winter. The pure Bedouins are tall, well-built men with dark skins, dark piercing eyes and black hair. They are brave, hardy, hospitable, and simple in their habits and food, living on bread, milk, and dates.¹⁸²

The Mediterranean race is the most prominent one in Iraq. In the desert fringes of the southwest and in the plains of Upper Iraq there are nomadic and semi-nomadic Arabs who raise camels, horses, donkeys, sheep and goats. Apart from Persians, Kurds, Turcomans and others on the borders, the population consists almost entirely of Sunni and Shi'ah Arabs.¹⁸³ Iran has 3,000,000 nomads including Arabs, Turks, Kurds, Baluchis and Pers.¹⁸⁴

There are several racial divisions in Afghanistan. Among them are Mongols, Turks and Indo-Aryans. Nearly all the people are Mohammedans. The different customs, traditions, languages

180. Ibid., p. 451.
181. ibid., p. 138.
182. Ibid., p. 111.
183. Ibid., p. 147.
184. Ibid., p. 153.

and ways of life make national unity difficult.¹⁸⁵ The Tajiks here represent the original Persian possessors. They are the cultivators in the rural districts and the shop-keepers and clerks in the towns. The Hazara and Mongols speak a Persian dialect and belong to the Shian sect of the Mohammedans. They are pure Mongols and mix with no other races, and are influenced by their surroundings. The Duranis are pure Afghan.¹⁸⁶

The population of Baluchistan is scanty, and the Baluchi are generally regarded as akin to the Afghan. The Brahui speak a Dravidian type of language, but are Baluchi in physical measurements and appearance.¹⁸⁷ Other tribes are the Chuta and the Bandiya. The majority of the population is nomadic and belongs to three principal races, the Brahui, the Baluchi and the Pathan. They all speak different languages. The Brahuys do not like the summer heat, and migrate to the mountains with their animals. In the winter they return to the alluvial plains. In bad seasons and sometimes every winter they go to the Sind till spring.¹⁸⁸

The population of Mongolia is now a peaceable race chiefly engaged in the rearing of sheep, camels and horses. The fixed settlements are chiefly in the north.

185. Cressy, op. cit., p. 413.

186. Hamilton, op. cit., pp. 221-2.

187. Haddon, op. cit., p. 111.

188. Stamp, op. cit., p. 279.

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- 185. Grassy, op. cit., p. 115.
- 186. Hamilton, op. cit., pp. 221-2.
- 187. Hudson, op. cit., p. 111.
- 188. Grassy, op. cit., p. 270.

Sinkiang has 1,500,000 people. These are almost entirely confined to the oases of which the chief ones are Kashgar with 300,000, Yangi Shahr and Yarkand with 200,000, and Aqsu and Khotan with 190,000. The nomads number 125,000 and live in the cold highlands. The Kirghiz are the leading group and their number is estimated at 50,000, all of whom are Moslem. The Dulanis lead a sedentary life in the Forest country. The Kazaks, Tajiks and Mongols are also nomadic.¹⁸⁹ The semi-nomads are the Tagliks. They spend their summers in the mountains, and in the winter live in huts or caves in the foothills. The Tunganis number 5000 families. They are Mohammed^edan and are an important political element. Their origin is still in doubt. They have assumed Chinese dress, manners and customs, but have preserved the Islamic religion. They form the bulk of the population around Karashahr, Turfan and Urumchi.¹⁹⁰ There are also 13,000 Tajiks, 6000 Chinese, 5000 Indians and 1000 Abdalis.¹⁹¹ There are also Manchus, Mongols and Kalmuks, (Taranchi or Tor-God) Turks and Tibetans in Sinkiang. The Kalmuks live in the north and in the northwest are the Kirghiz. The basis of the population in the Takla Makan is the Pamiri. Chinese are in the east but their influence is spread over a restricted area.¹⁹²

189. Etherton, op. cit., p. 74.

190. Etherton, op. cit., p. 75.

191. Sykes, op. cit., p. 242.

192. Haddon, op. cit., p. 113.

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189. Eberston, *op. cit.*, p. 74.
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 191. Sykes, *op. cit.*, p. 242.
 192. Haddon, *op. cit.*, p. 113.

No less than 65 per cent of these Chinese have yellow skin. 75 per cent have black hair which is generally straight and the majority have dark eyes. These people are longheaded.¹⁹³

Lop Liks

An interesting group of people living in Sinkiang are the Lop Liks around the shores of Lop Nor Lake. This is a lake with no outlet. It is explained by Sven Hedin by recent formation, the lakes beds being frequently filled up by the desert sand and forming afresh in a new place.¹⁹⁴ This is the terminal lake for the Tarim River, and has a unique history. 2000 years ago it was located near 90 degrees east and 41 degrees north with the new ruined city of Loulan on its banks. Later the river was diverted to the south and a new lake developed near 88 degrees east and 39 degrees north leaving the original lake a salt-encrusted flat.¹⁹⁵ It is a swampy area, and receives all of the drainage of Sinkiang. It is the breeding ground of ducks, geese, and many species of migratory birds. It is marked by the phenomenon of a dead forest far out in the desert lost in the waste of sand hills. This dead area is followed by an area of living forest. Then along the banks of the lake are fresh, young trees marking the line of a new forest.

193. Buxton, The Peoples of Asia, p. 175.

194. Cressy, op. cit., p. 155.

195. Ibid., p. 155.

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193. Huxton, The Peoples of Asia, p. 175.
194. Cressy, op. cit., p. 155.
195. Ibid., p. 155.

The people are a curious type with a mixed physiognomy such that one may see a Mongolian cast of countenance as well as a pronounced type of European features. They are Mohammedans, but many have Shamanistic rites. They bury their dead in canoes with fishing nets and tackle. Their occupation is almost exclusively confined to fishing. The people live in rough huts made of reeds and wattles. Their principal manufacture is a cloth made from sheep's wool or the fibre of a plant that grows along the river banks. They also cure wild animal skins which they procure by hunting and trapping. Their environment precludes knowledge of the outside world, and they say it is not for them to be concerned with the problems of government for their business is fishing and their constant struggle for existence among the marshes. They are philosophers in their own way, and are deeply religious. They are naturally hospitable and will offer fish taken from the lake or river with an entree of wild duck's eggs and young shoots of reeds cooked in fat or stewed like lentils. In the fall they collect the fallen reeds and boil them to extract the dark glutinous substance that makes a passable sugar. Their purchase money and dowry is made up of bundles of fibre strings of sun-dried fish and a proportion of wild ducks and geese. They have a system of local government in accordance with their own customs and Chinese interference is limited to

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The great bulk of the Tibetan population lives in the Brahmaputra Valley and in the immediately adjoining valleys. The people are Buddhists.¹⁹⁷ There are three groups. The Bod-pa live in the settled and more civilized section of the south and in the more fertile provinces. The Dru-pa are a peaceful, semi-nomadic tribe living on the northern plateau. They are a hardy independent and hospitable people though they are cautious toward strangers.¹⁹⁸ The Tagut are a predatory tribe who live in the northeast borderland between Koko Nor and Kansu.¹⁹⁹

The people of Soviet Central Asia who are concerned in this discussion and who form the bulk of the population are the settled Sarts with Uzbek, Kirghiz, Tajik and other elements.²⁰⁰ The nomad Kirghiz are well-represented. Pure Uzbeks are few in number. There are Turkomenas living between the Duab River and the Caspian. The Galcha live in the mountains, and are the purest of the Pamiri. There are also representatives of the Central Asiatic tribes.²⁰¹ Turan is inhabited by a wide variety of races including the Turkomans,

196. Etherton, op. cit., pp. 91-3.

197. Mill, op. cit., p. 541.

198. Bell, op. cit., p. 19.

199. Haddon, op. cit., p. 113.

200. Ibid., p. 112.

201. Loc. cit.

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196. Eberhard, op. cit., pp. 91-3.
 197. Mill, op. cit., p. 541.
 198. Bell, op. cit., p. 19.
 199. Sadon, op. cit., p. 113.
 200. Ibid., p. 113.
 201. Loc. cit.

Uzbeks, Persians, Tajiks, Kirghiz, Sarts and Russians.²⁰² In the Aral-Balkhash Deserts most of the people live in oases, and most of the nomads are now collectivized.²⁰³

A general discussion of the deserts has already been included, but not enough has been said about the steppe. The western steppelands seem to have been the original home of the Proto-Nordics.²⁰⁴ The greatest area of steppe lies in Asiatic Russia. In Soviet Central Asia the areas of Turan and Aral-Balkhash are poor steppeland. The steppe in Turan lies north of the gravel desert. Where it begins it is very poor and salty, but its scanty grass is suitable for sheep. Going north there is a loam steppe which has a good covering of grass in the spring and autumn. Here even the driest parts can grow camel-thorn.²⁰⁵ One-tenth of the Pamir area is poor steppe, and there are some coarse grasses above the snowline in winter. The great grass-steppe begins in southwest Siberia between 50 and 55 degrees north latitude and reaches as far east as the Ob River. There are also steppes of this type east of the Altai, and south of the Sayanski and Yablonovoi Mountains, in the valleys of the great rivers which rise in eastern Tibet, at the base of the mountains enclosing the Tarim Basin and in southwestern Iran. The mountain snows are the

202. Cressy, op. cit., p. 350.

203. Ibid., p. 352.

204. Haddon, op. cit., pp. 91-2.

205. Lyde, op. cit., p. 87.

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²⁰² Greasy, op. cit., p. 350.

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²⁰⁵ Lyde, op. cit., p. 87.

source of water for the steppe, and where there are perennial streams there are rich oases producing fruits, vegetables and cereals.

The steppe of Russian Turkestan is sprinkled with lakes, funnel-shaped hollows and salt marshes side by side with lagoons and freshwater lakes.²⁰⁶ The Sir Darya and Amu Darya are the main rivers of this area. The Sir Darya rises in the Tien Shan, and as it flows across the steppe it diminishes in volume due to the numerous irrigation ditches.²⁰⁷ The Amu Darya is 1550 miles long.

Some of the steppes have their own names. The Bedpak Steppe lies north of the Chu River. Along the south shore of Lake Balkhash is the Golodnaya Steppe which is slightly higher and more moist than the adjacent desert. This area is irrigated by the Emperor Nicholas I Canal from the Sir Darya.²⁰⁸ The Urta Chul Steppe is located between Bukhara and Karsi, and is the home of the caracal sheep.²⁰⁹ The steppe in the Pamirs and the Tien Shan have a generally dry climate with long periods of clear weather. The upper and lower meadows are used for grazing sheep, horses and cattle, and transhumance is practised. When they are on the move the shepherds live in round felt-covered tents which are similar to the Mongolian yurts.

206. Mill, op. cit., p. 396.

207. Ibid., p. 397.

208. Hamilton, op. cit., p. 55.

209. Ibid., p. 29.

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206. Mill, op. cit., p. 296.
207. Ibid., p. 297.
208. Hamilton, op. cit., p. 22.
209. Ibid., p. 23.

The agriculture is limited to the lower valleys and usually depends on irrigation. Many of the irrigation canals are very old.²¹⁰ The Astrakan Steppes are peopled by the Kalmuks, and the Orenburg steppes by the Kirghiz. The Kirghiz Steppe is also known as the Kazakh Hills. This area connects the southern end of the Urals with branches of the Altai and Tien Shan. It also connects the steppe of southern European Russia with the Mongolian steppe through the Dzungarian Gate. It is an area of rolling topography with few water courses. The people are Kirghiz and Kazaks.²¹¹

The steppe of southern Russia has a rainfall of 20 inches in the west decreasing to 12 inches in the southeast. This is an area of rich black soil and chestnut-brown soils. The agricultural frontier is at the 12 inch line in comparison with the 20 inch line followed in the United States. Successful agriculture depends on building up the soil moisture by the careful conservation of winter snows and frequent cultivation to check the evaporation. They have used shelter belt planting for decades with considerable success. The present irrigation developments are limited to the flood plains of the rivers.²¹²

Most of the people of Siberia live in the steppe area. Much of it is no colder than European Russia. The winter lasts

210. Cressy, op. cit., p. 344.

211. Stamp, op. cit., p. 681.

212. Cressy, op. cit., p. 333.

six to seven months, and there is not much snow. Many flowers grow here among which are the acacia, daisy, flowering peas, pond lillies and roses. Most of the houses are frame as wood is always accessible. The villages do not have any distinguishing features and are always monotonous. The settlers did not seem to take much interest in beautifying their surroundings. Some of them planted flowers, but few of the villages grow trees, and there is always an air of impermanence about them. Rough-hewn telephone and telegraph lines emphasize the fact that this was a frontier area only recently. The community center is the hub of whatever social life the village has. There is a movie house and coöperative store, and a church with a bulbous tower or a mosque with its slender minaret.

Modern Siberia of the steppe zone is changing. There is a steady migration into the industrial centers and large cities are growing around the core of factories.²¹³

On the Mongolian steppe the technique of life has always depended on combining the transport uses of camels, horses and cattle, and the basic standard of wealth in sheep in varying proportions according to the way in which the local environment varies between the Siberian forests and The Gobi Desert.²¹⁴ Their form of pastoral nomadism is an extensive economy which

213. Lengyel, op. cit., pp. 20-1.

214. Lattimore, Inner Asian Frontiers of China, p. 75.

forces a wide dispersal of society.²¹⁵ It is the selfsufficiency of the shepherd economy with its variations that has restricted the growth and prevented the permanent survival of any true mixed economy.²¹⁶

In the more recent centuries the Mongols have been restricted within territorial boundaries. The title to such territories belongs to the tribe as a whole, and there is, therefore, no individual property in land. The noble families have direct use of the best pastures.²¹⁷ "The phases of the steppe nomadic history are to be traced by the rise and fall of greater and lesser lords who are the 'protectors' of the right of movement of lesser men, from whom they demand services in peace and war and a variety of tribute in kind."²¹⁸

The western part of Manchuria beyond the Khungan Mountains, Heilungkiang Province, is steppe. It is occupied by Mongols who graze their flocks there. A considerable part of the area is impregnated with soda and other salts and is therefore unfit for cultivation. Game abounds here, and the tiger, bear, leopard, deer, antelope, roe deer and wild boar may be found. There are also sables, hares, badgers, wild cats, foxes and winged game. Herds of ponies, cattle, sheep and pigs may also be included.²¹⁹

215. Ibid., p. 58.

216. Ibid., p. 76.

217. Ibid., p. 66.

218. Ibid., p. 67.

219. A. Hosie, Manchuria, 1904, pp. 145-6

Cities

A good percentage of the people of Asia's deserts and steppes live in the cities of the area.

The cities of Central Asia are oasis towns. Urumchi (Tihwa) is the capital of Sinkiang. Going from south to north there are three towns: the main walled Chinese city, the walled Moslem city and the Russian quarter.²²⁰ Maralbashi is not a large town, but its oasis is well-irrigated and has an abundant supply of subsoil water and several lakes. It is connected by two important routes with Kashgar and Yarkand. Aqsu is located on the confluence of the Tushkan and Kumarik darya. These streams have a considerable volume of water in the spring and early summer from the melting snow and glaciers of the main chain of the Tien Shan, and there is an extensive irrigated area.²²¹ Karashahr is a Chinese-Mongol city and is the center of the Torgut Mongols. It is famous for its ponies and mushrooms.²²² Karakorum is an old Mongol capital, and Khotan an old jade center. The modern oasis population numbers 150,000 with a considerable Chinese element. Throughout its history the city was an important trading center on the old silk route. Its artisans are famed for their silks, carpets, felts, wools, furs, jade and cotton stuffs.²²³ The irrigated area of 620

220. Teichman, op. cit., p. 101.

221. Roerich, op. cit., p. 96.

222. Teichman, op. cit., p. 129.

223. Roerich, op. cit., p. 63.

square miles is well-watered and has fertile beds of alluvial loess. The water comes from the Kunlun Mountains.²²⁴ Wheat, corn, barley and rice are cultivated on an intensive scale, and there are also apples, pears, apricots, grapes and melons. The city is characterized by dust lanes lined with poplars, and is filled with evil-smelling bazaars and open shops. The social life has not changed since the time of Marco Polo.²²⁵ Kocha was the most important trading center along the caravan route from Kashgar to Urumchi. It is located at the point where the Muzart and Kocha Rivers emerge from the Tien Shan, and the oasis is in a very favorable position which from ancient times made it an important economic and political center. It is an important fruit-growing center.²²⁶ Yarkand covers 810 square miles and has a city population of 60,000. The people are mainly Turki with Tatar and Chinese elements. There are also Andijanis, Badakhshanis, Chintralis, Baltis, Kashmiris, Hindus and others from the northwest province of India. Its streets and bazaars are very crooked and numerous passages lead from them to small squares, court yards and tanks. These tanks are fed irregularly from stagnant streams and provide the city's water supply as well as being washing places for men, women, animals and clothes. The area is well cultivated, and has a number of small farm-

224. Lattimore, High Tartary, p. 36.

225. Roerich, op. cit., p. 65.

226. Ibid., p. 98.

steads scattered in clusters among the fields and gardens.²²⁷
 The oasis of Hami is large and favored and grows fine melons.²²⁸
 Kashgar has 1000 square miles under cultivation and a city
 population of 35,000. It is the meeting ground of many nation-
 alities, and its bazaars are filled with traders from China,
 India, Afghanistan, Bukhara and Soviet Central Asia.²²⁹

The Cities of Soviet Central Asia which belong to this
 discussion are Merv, Tashkent, Bukhara and Samarkand. In Merv
 the bazaars have innumerable articles of the Middle East.²³⁰
 Tashkent is on the slopes of the Tien Shan in the midst of a
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 January is the coldest month and July the hottest. The pre-
 vailing winds are north and northeast, but the characteristic
 peculiarity of the climate is the absence of wind which makes
 the high summer temperatures oppressive.²³¹ This city is the
 capital of Uzbekistan, the largest city of Soviet Central Asia,
 and is the center of the southern industrial combine.²³² This
 area produces iron and steel, fertilizers and water power. The
 city also produces coal, copper and vegetable oils.²³³ Bukhara

227. Etherton, op. cit., pp. 134-5.

228. Teichman, op. cit., p. 83.

229. Roerich, op. cit., p. 529.

230. Hamilton, op. cit., p. 48.

231. Ibid., p. 42.

232. Lengyel, op. cit., p. 338.

233. Ibid. p. 31.

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 232. Jengyel, op. cit., p. 338.
 233. Ibid., p. 31.

has bazaars filled with drugs, dyes and teas from India; wool, skins and dried fruit from Afghanistan; woven goods, arms and books from Persia along with Russian wares.²³⁴ It was a holy city along with Samarkand, and was known as the "haven of glory", and the "meeting place of the foremost people". Also the city was once the capital of all the land between China and the Caspian Sea. It was the mecca of Central Asia, the pilgrims considered it a pious deed to invoke Allah's blessing at its holy shrines.²³⁵ In the bazaars the people dress in choicest silks which are dyed yellow, green, brown, magenta, purple, and blue. Their gowns are long-shirted, clasped at the waist, and they wear silken trousers tucked into brown untanned boots, the seams of which are delicately embroidered.²³⁶ This dress may also be seen in Samarkand. The city is supplied with water from the Shari Rud Canal fed by the Zeravshan River. A large amount of the water is stored locally in special reservoirs.²³⁷ Samarkand was known as Samarkand the Magnificent and still retains vestiges of its ancient glory, even though the Soviets frown upon historical memories of a discredited past. But Tamerlane's tomb still stands. The city is part of the industrial development of this part of Russia. In the native quarter the streets are narrow, winding and unpaved. The houses are made

234. E.C. Semple, Influences of Geographic Environment, p.529

235. Lengyel, op. cit., p. 368.

236. Hamilton, op. cit. p. 40.

237. Ibid., p. 31.

of baked mud and are mean and cramped with flat earthen roofs and no windows.²³⁸

Damascus may also be included here. Its existence is made possible by the Barada River whose waters irrigate the land at the edge of the Syrian Desert. The irrigated Damascus plain covers 150 square miles and grows fruits, vegetables and grain.

The final part of this section will be a discussion of the various areas and their utilization by the people. It will also include a special discussion of certain groups of people.

Turks

Anatolia is the home of nomads who keep sheep and goats. The steppe dominates all of the area by the quality of men it produces. Most of the people make their living by agriculture. Wheat is only grown in the moister areas such as on alluvial fans or in irrigated oases. The staple item in their diet is solidified sour milk (yoghurt) which is made from the milk of sheep, buffaloes, goats or cows.²³⁹ Camels and mules are the common means of transportation. The nomads take their flocks into mountain pasture in summer. In the winter they come down to the plains where the sheep and goats are kept in enclosures

238. Ibid., p. 1.

239. Cressy, op. cit., p. 388

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except where the snow cover permits some grazing. Wool is the basis of a domestic rug industry and angora wool is exported. In religion, the people are Moslem or Christian. The Moslems belong to the Sunni or Shia sect, and the Christians are Greek Orthodox, Armenian, Nestorian, Protestant and Roman Catholic.

Arabs

In Arabia there has always been conflict between the desert peoples and the fixed oasis people, and this conflict has been characteristic since very early times.²⁴⁰ The desert people live in long, low tents of black hair cloth. Their dress is scanty and consists of a long skirt with a belt and a flowing upper garment. A shawl held by a cord is the headdress. They do not wear trousers and footwear is rare. Here fixed settlement depends on agriculture which in turn depends on local water supplies either from springs, wells or reservoirs. A few of the wadis have groundwater sufficiently close to the surface to allow crops. The larger oases grow wheat, barley and millet.²⁴¹ However, the chief food is the date. The daily food of the Bedouin is dates and a mixture of flour or wasted corn mixed with water or milk.²⁴² The animals which graze on the available grassland are sheep, goats, horses and camels. The nomads are the camel breeders and they sell them to the

240. Ibid., p. 397.

241. Ibid., p. 399.

242. Hitti, op. cit., p. 24.

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240. Ibid., p. 397.
241. Ibid., p. 399.
242. Ibid., pp. 415, p. 24.

settled people.²⁴³ The camel is the most useful animal to the nomad, and serves him as a nourisher, vehicle, medium of exchange, dowry, price of blood, profit of gambling, and in the case of a shiek, wealth.²⁴⁴ The breeding of the famous Arabian horse is less important than camel raising. These horses come chiefly from Nejd. The horse is famous for its physical beauty, endurance, intelligence and devotion. In Arabia the horse is an animal of luxury and its care and feeding are a problem to the nomad. Its chief value lies in providing speed for the Bedouin raids, and it is also used for sports.²⁴⁵

As described by Huntington the main events in the life of an Arab nomad in the course of a year are as follows: In the spring he lays up a supply of sour cheese and curds; in the summer he exchanges his surplus animals, chiefly young mares, for dates, wheat and rice grown in the oases or in the borderlands around the desert. In good years he can lay up enough food to last until the following spring. If he is unable to provide later than February, he can get through until spring on milk.²⁴⁶ Due to this latter fact the raids are a part of the ordinary routine of life. Bedouin life represents the best adaptation of human life to desert conditions.

243. Stamp, op. cit., p. 139.

244. Hitti, op. cit., p. 21.

245. Ibid., p. 20.

246. Huntington, The Character of Races, pp. 120-1.

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²⁴³ Stamp, *op. cit.*, p. 139.
²⁴⁴ Hitti, *op. cit.*, p. 51.
²⁴⁵ Ibid., p. 50.
²⁴⁶ Huntington, *The Character of Races*, pp. 120-1.

The culture pattern is always the same; he lives in a tent of goats' or camels' hair as his ancestors did. His staple occupation is sheep or camel raising and to a lesser degree horsebreeding, hunting and racing.²⁴⁷

The chief Arab traits are predatory habits, dishonesty, and laziness. He is also generous as everyone is subject to raids. They therefore aid each other in times of distress.

Physically, the Bedouin is a bundle of nerves, bones and sinews. The leanness and barrenness of his land show themselves in his physique. He takes his religion lightly.

Clan organization is the basis of Bedouin society. Every tent represents a family; an encampment of tents a hayy; and the members of one hayy make up a clan. A number of kindred clans grouped together equal a tribe. All the members of the same clan consider each other as of the same blood, and submit to the authority of but one chief who is the senior member of the clan. The tent and its household contents are individual property, but water, pasture and cultivatable land are the common property of the tribe. The spirit of the clan is asabiyyah and implies boundless and unconditional loyalty to the fellow clansmen. The sheik, as has been stated, is the senior member of the tribe and his leadership asserts itself in sober counsel, generosity and courage. Seniority in age is not the

247. Hitti, op. cit., p. 23.

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determining factor in the choice of the sheik; personal qualifications are also considered.²⁴⁸

In Iraq the wandering nomads gain a meagre existence in the moister plains, but life is usually anchored to some oasis or possibly to a mountainous area with more rain. Nomads from Arabia, the mountains of Iran and Armenia, have invaded the oases of Iraq for centuries. Their desert wells are valuable property, and their control has often led to war. Now nomadism is on the decline as it is a government policy to encourage fixed settlement. In this country agriculture is always the basis of the economy. In the oases are stretches of rice, corn and enormous groves of date palms. The quality of the rice is poor but the yield is large. The paddy fields are usually on the lowest part of the slopes from the raised river channels to the surrounding swamps. Rice is the main cereal of Lower Iraq. The date also grows in this area and the sides of the rivers are covered with date plantations. Eighty percent of the world's supply comes from here. Wheat, in conjunction with barley, is the main cereal of Upper Iraq. In parts of the Mosual area it is grown by dry farming. The wheat is hard, red and of good quality, and is grown entirely for home consumption. Other crops are maize, millets and sesame in Lower Iraq, and tobacco in the north. In the Shatt-el-Arab

248. Ibid., pp. 26-8.

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region, opium, hemp, lentils and licorice root are to be found. Two harvests are possible in this country. In April or May the winter crops of wheat, barley and beans are gathered, and the others, between August and November. In the desert fringes of the southwest and in the plains of Upper Iraq, the nomadic and semi-nomadic Arabs rear camels, horses, donkeys, sheep and goats.²⁴⁹

In Persia, except in the heart of the Lut, there are villages at intervals all over the country. These areas depend mainly on karez for their water.²⁵⁰ The winter crops are irrigated after the rains in March through June. The summer crops need rain May through September.²⁵¹ Industry here is a village one, and is greatly localized because of the cheapness in a particular neighborhood of the primary substance and the traditional craftsmanship which generally stays in one district.²⁵² The Persian rugs come from Kurdistan, Khorasan, Ferahan, Kain and Kerman. They are known for their fine texture and velvety pile. These carpets are made on hand looms in small shops or in the homes.²⁵³ Persia is also noted for its shawls. These are handwoven out of kurk, the underwool of goats. There are other native industries: sword blades, brass and copper vessels

249. Stamp, op. cit., pp. 143-7.

250. Sykes, op. cit., p. 236.

251. Cressy, op. cit., p. 411.

252. Stamp, op. cit., p. 157.

253. Cressy, op. cit., p. 411.

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of all sorts, carved and inlaid metal and wood and ornamental tiles.²⁵⁴

The people in Afghanistan, apart from the nomadic groups concentrated in the valleys where the alluvial stretches are sufficiently large and well watered for wheat and barley, are grouped together in high-walled villages.²⁵⁵ Their life does not entail any elaborate preparations; their provisions are cheap, and sheep and oxen are abundant. Each house has its own water butte on the flat roof where the rainwater is collected. The building materials are mud and crude bricks. The influence of religion may be seen in the separation of each house into men's and women's quarters. There are no windows except those opening onto the court. In the poorer houses the men's and women's quarters are reduced to a single room. Except for the prayer rug there is no furniture except in the homes of the rich.

The national dress of the Afghan men is baggy trousers with a loose shirt worn outside, a vest, girdle and shoes with turned up toes. The usual headdress is a white or black turban, but a low fez is worn in the towns. Many of the older men wear a full beard which is sometimes dyed red with henna. All of the men have small mustaches. Indoors, the women wear loose trousers, a long-sleeved mantle, stockings, sandals, and a veil covering the hair. Outside they wear a sack-like white, black or blue garment which is thrown over the head and reaches to

254. Mill, op. cit., p. 461.

255. Stamp, op. cit., p. 164.

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the ankles. In the cities they are veiled but not in the country.²⁵⁶

Where irrigation is possible the people are able to grow two crops a year. The winter crops are wheat, barley, and some peas. The summer crops are millet, maize and sometimes rice.²⁵⁷ Cultivation is limited to the oases and large river valleys where the leading crops are dates, pomegranates and sugar cane.²⁵⁸ Other crops are the castor-oil plant, mustard, sesame, melons, pumpkins, beans, Indian corn, millet, jowari, madder, tobacco, cotton, opium, jemp, clover and lucerne. A wide variety of fruit is also grown along with walnuts and pistachios. Along the norther border there is a zone five miles wide along the lower Oxus with intensive cultivation. Irrigation is widely employed, and the water is taken from the river in long canals.²⁵⁹

The food of the people consists of thin, flat cakes of wheat and barley, fruit, some rice for the rich, and occasionally, well cooked meat. Water is the usual drink though green tea is widely used.²⁶⁰

Sheep are the principal source of wealth. The nomads drive them from pasture to pasture moving north to the mountains in the summer. The fat-tailed sheep is a native of this country,

256. Ibid., p. 166.

257. Ibid., p. 168.

258. Ibid., p. 163.

259. Hamilton, op. cit., p. 94.

260. Stamp, op. cit., p. 166.

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and is characterized by the immense weight and size of its tail caused by the development of masses of fat stored up for nourishment. These sheep furnish the principal animal foodstuffs; the grease of the tail is used as a substitute for butter. The wool and skins make the materials for native clothing and are also one of the chief exports. The manufacture of sheepskin coats is an important industry. Other animals are the camel and donkey, and to a lesser extent the horse and ox.²⁶¹

The people are hardy, stubborn and brave. They are also so treacherous that the word gains an intensive meaning when applied to them. They are servile toward strangers, and are natural intriguers. They are also arrogant, vindictive and cruel. In religion they are Mohammedans and other creeds are tolerated with the exception of Christianity.²⁶²

Baluchistan is the land of the pastoral nomad, and transhumance is common. The summer homes are shelters made of branches or tents made of goat-hair matting or blankets. In the winter they may live in villages in huts with walls made of straw and mud. The roofs are made with wooden rafters covered with a matting of dried palm leaves or tamarisk.²⁶³ The crops are wheat, millet, rice and barley with sorghum the chief grain. They also grow fruits.

261. Ibid., p. 168.

262. Mill, op. cit., p. 464.

263. Stamp, op. cit., p. 279.

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In the Sind nearly two-thirds of the crops are irrigated. Wheat, rice, millet and cotton are grown.²⁶⁴

There are few oases in the Thar Desert and these are linked by camel caravans. The center of these camel routes is Jaisalmer. The area is thinly populated. Some of the people live in villages which spring up wherever there is a little water, and some millet and fodder can be grown. The water in the wells frequently fails or becomes salt and the village must be abandoned.²⁶⁵

Mongolians

Nomadic life in Mongolia has been progressively diminishing since 1924 under Soviet attempts to collectivize herding. Under the Manchu dynasty the various tribes and banners were assigned specific grazing areas. Trade was introduced, and through the manipulation of Chinese merchants whole tribes became in debt for large amounts. This tended to further fix the groups of people in specific areas.²⁶⁶ The Gobi divides the revolutionary Mongols of the north from the conservative groups to the south and east.²⁶⁷ The Gobi itself is inhabited by the third group of Mongols called the "true" Mongols who claim kinship with Genghis Khan. They include a number of tribes and

264. Ibid., p. 285.

265. Ibid., p. 341.

266. Cressy, op. cit., p. 146.

267. Lattimore, The Mongols of Manchuria, 1934, p. 42.

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²⁶⁴ Ibid., p. 285.

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²⁶⁶ Gray, op. cit., p. 146.

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The Mongolian yurt will be discussed below. Along the piedmont margin of the Gobi the encampments vary from four tents to a larger number according to the amount of water and grass available.²⁶⁹

The men wear a form of dressing gown as bright as they can bear, tied with a brilliant sash. The hat has a large saucer-shaped brim which turns up at the edges and rises into a high crown that may be any color. They wear long leather boots which reach to the knee and are always several sizes too large. This allows plenty of room for socks, pipes, bricks of tea and household utensils. The women wear brocade and cloth with ruffs. They plait their hair onto a framework curved like horns of sheep terminating in a silver plaque covered with beads and precious stones.²⁷⁰

Their food is largely derived from their flocks. They buy barley, millet, flour and brick tea from passing caravans. Milk, butter, cheese and mutton are the chief items in their diet. Sour milk is the basis of the staple drink which is a concoction of tea, salt, rancid butter and often with parched barley and bits of cheese. This is drunk piping hot from a

268. Buxton, The Peoples of Asia, pp. 180-1.

269. Semple, op. cit., p. 497.

270. Etherton, op. cit., p. 174.

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wooden bowl.

Animals are the chief means of livelihood, and the people keep flocks of cattle, sheep, horses and camels. Wool and hides are their chief export. The sheep are the most useful animals.²⁷¹

The Mongols do not have much in the way of occupation. The pipe of peace is an occupation as well as a diversion for them. Without tobacco and the drink of fermented mare's milk life would be very dull for them.²⁷² They are excellent riders and enjoy rough games on horseback.

They are Buddhists believing in the Lama variety. Their religion has a very strong hold on them, and nearly one-third of all the adult men are in the Lama priesthood.

They are a cheerful and hospitable race and have great powers of endurance. They are passionately fond of drink and smoke, and will endure almost anything to get gloriously drunk.²⁷³

Their customs may be discussed here. For weddings, the bride is dressed in a long colored coat fastened by a sash at the waist, and a hat shaped like an inverted saucer with stand-up edges trimmed with dangling gold, black, yellow and red tassels. She also wears riding boots and carries a handsome riding whip. A riding meet is held which may be termed a love chase,

271. Cressy, op. cit., pp. 145-6.

272. Etherton, op. cit., p. 175.

273. Ibid., p. 178.

wooden bowl.

Animals are the chief means of livelihood, and the people

keep flocks of cattle, sheep, horses and camels. Wool and

hides are their chief export. The sheep are the most useful

animals.²⁷¹

The Mongols do not have much in the way of occupation.

The pipe of peace is an occupation as well as a diversion for

them. Without tobacco and the drink of fermented mare's milk

life would be very dull for them.²⁷² They are excellent riders

and enjoy rough games on horseback.

They are Buddhists believing in the lama variety. Their

religion has a very strong hold on them, and nearly one-third

of all the adult men are in the lama priesthood.

They are a cheerful and hospitable race and have great pow-

ers of endurance. They are passionately fond of drink and smoke

and will endure almost anything to get gloriously drunk.²⁷³

Their customs may be discussed here. For weddings, the

bride is dressed in a long colored coat fastened by a sash at

the waist, and a hat shaped like an inverted saucer with stand-

up edges trimmed with dangling gold, black, yellow and red tassels.

She also wears riding boots and carries a handsome riding

whip. A riding meet is held which may be termed a love chase,

²⁷¹ Greasy, op. cit., pp. 145-6.²⁷² Ebertson, op. cit., p. 175.²⁷³ Ibid., p. 178.

and she uses the whip to beat off undesirables. In eastern Mongolia the dead are sometimes placed in a cart and are then driven at full speed across the plain. The body is dislodged but the driver does not dare look back as he does not want to attract evil spirits. The medical profession is a popular one, and is a system of superstition and horrific remedies applied to trusting individuals. The lamas find it a profitable trade, and payment is reckoned by results. The more objectionable the treatment the more readily it is taken. In keeping with the basic ideas of their religion which ordain that the taking of all life is a sin, they imagine that illness has assailed them because of having inadvertently cut a stick from a tree or dug a hole and killed a worm or an insect.²⁷⁴

The population in the southern part of Sinkiang is distributed vertically, and lateral communication is difficult. The oases are connected by an arterial road which follows the foot of the hills. In Kashgaria the population for the most part is in the irrigated oases on the banks of rivers at the base of the Kunlun, Altyn Tagh, Pamirs and Tien Shan. In the east there is another series of oases which stretch from Ansi-fan in the south to Hami in the north. This chain of watering places forms the shortest route across the desert, and is the direct continuation of the great northwest highway of China.

274. Ibid., pp. 176-7.

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This route continues westward either south of the Tien Shan by the oases of Turfan, Karashahr, and Kuchar to Kashgar or north of the mountains by Barkul and Urumchi to Kulja in the Ili Valley. South of the desert the important oases are Yarkand, Khotan, Keria and Cherchen. The people along the river banks between Yarkand, Maralbashi and Aqsu are the Dolans, a poor, illiterate tribe of herdsmen, trappers and collectors of fuel and desert salt for local markets. They profess a form of Mohammedanism. They live in small, reed huts and their household utensils are of the simplest kind.²⁷⁵

It is believed that this area was once inhabited by Aryan tribes, but in the second century of the Christian era, races of Mongolian origin appeared and either drove out the aborigines or mingled with them and so formed the race now living there. Traces are also found of the Arabs who invaded the country in the eighth century.²⁷⁶ The leading elements of the population are Aryan and Mongol. The majority of races are of Turkish origin and may be divided into two classes; the settled or urban people of the plains and the nomads of the hills and mountain tracts.

The natural growth within the reach of water is profuse, but it is not too heavy to be readily cleared by fire or by hacking and grubbing with rough tools. The soil is easily

275. Ibid., p. 145.

276. Ibid., p. 73.

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²⁷⁵. *Ibid.*, p. 145.
²⁷⁶. *Ibid.*, p. 73.

worked, so easily in fact that the crude form of hoe has always remained the characteristic tool of the oases. This hoe is not only used for cultivation, but for making irrigation channels and for all kinds of excavation work. The crops are almost entirely free of the danger of damage by unseasonal, unwanted rain.²⁷⁷ All of the oases produce wheat, barley and other essentials within their own limits, and therefore need little communication with their neighbors from whom they want nothing and to whom they sell nothing.²⁷⁸ The oases also grow melons, apricots, pears, barley and corn. Some of them also produce mulberries, plums, cherries, pomegranates and apples.²⁷⁹ The trees of the oases have little value as timber and are useful only as fuel and shade. Willows and poplars are the most common.

Sinkiang is poor in arts and crafts. The length and difficulty of its few trade routes connecting the Tarim Basin with the rest of the world prevented the maintenance and renaissance of its crafts and little of artistic value is produced today.²⁸⁰ Also the calligraphic arts never seem to have flourished.²⁸¹

Politically, the nomads are administered independently of the provincial governors by an official generally known as the

277. Lattimore, Inner Asian Frontiers of China, pp. 156-7.

278. Sykes, op. cit., p. 237.

279. W.J. Morden, Across Asia's Snows and Deserts, 1927, pp. 103-4.

280. C.P. Skrine, Chinese Central Asia, 1926, p. 172.

281. Ibid., p. 175.

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 280. G. P. Skrine, Chinese Central Asia, 1926, p. 172.
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Ili Tartar general who is the acknowledged head of the various tribal groups. The taxes are one-fifteenth of the crops or three shillings per 100 sheep or ten horses or five camels.²⁸²

Tibetans

In the high central plains of Tibet the stretches of grazing land can support pastoral nomadism, but in few of them is the grazing land as good as is to be found in the more favored parts of Mongolia. The access to each of these grazing regions is from one or more of the valleys that cut the rim of the country. There is therefore contact between the nomad groups and a large range of social contact between the main social conglomerations of China and India up to the valley dwellers of the outer periphery and then into the deep interior. These converging lines of cultural, economic and social intercourse make the center of Tibet a meeting ground of influences drawn remotely from a number of geographic regions and differing societies. The valley populations around the rim may be regarded as Tibetan in a political and linguistic sense. In a more primary sense they can be regarded as pocketed communities, being peoples of distant origin in Central Asia, India, northern and southwestern China and Burma. These people live in oases separated by the mountains. They have affiliations with the societies based on the irrigated

282. Sykes, op. cit., p. 243.

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agriculture of India, Central Asia and northern China. In the valleys which lead down to the Ssuchnan and Yunnan they have affiliations with the ancient trans-Yangtze people.²⁸³ Therefore, according to Lattimore, their civilization cannot be considered original. The herdsmen have derived theirs from the valley dwellers and from the steppe nomadism which penetrated from the north. Most of the valley settlements are easy to defend against nomad attack, and have been centers of power and wealth. The nomad groups of the south and east have not been able to break away from them, but have remained herders. The pastoral economy has remained ancillary to the agricultural economy, and the nomads are subordinate to the settled peoples.²⁸⁴

The people to be considered here are the Dropka. They live in tents made of yak hair made by the family. These dwellings are 12 feet long but sometimes reach 50 feet. There is an opening two feet wide in the middle of the roof which lets out some of the smoke. Under this vent is a ridge pole supported by a pole at each end. The roof is stretched by cords fastened at the sides and corners and which pass over short poles some distance from the tent and are then pegged to the ground. The lower edge is held down by iron pins or animal horns. A low wall of stones, mud or dried dung is built

283. Lattimore, op. cit., p. 208.

284. Ibid., pp. 211-12.

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around the tent to keep off the wind and snow. Inside in the center or near the entrance is a large stone or mud stove, and dung is used as fuel. Along the walls or stacked to make recesses are the daily needs: cooking utensils, buckets, churns, rugs, saddles and leather food bags.

The dress is a very full gown (chu-pa) with a high collar and long sleeves. In summer it is made of ordinary Tibetan cloth or silk. In winter the gown is made of sheepskin or cloth lined with lambskin or wadded cotton. This is tied tightly around the waist with a woolen or cotton band and puffed out above. In the capacious pocket thus formed they carry drinking cups and other odds and ends. The national boot is made of Tibetan cloth, felt or leather of various colors with red almost always included. The boot is knee-high and is slit behind the knee. It is tied with gay-colored woolen garters three or four feet long. The soles are usually of raw yak hide and there are no raised heels. The men's hats are of various kinds, but are usually fur-trimmed in winter. Most of them are felt, but cloth hats are also common.²⁸⁵

Agriculture is possible around the rim of the central mass. It is nowhere continuous over a large area and is confined to pockets strung out in an irregular cordon around the edge of the country.²⁸⁶

285. Bell, op. cit., pp. 19-20.

286. Lattimore, op. cit., p. 207.

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Their religion is deep in their hearts including even the shepherds. The herdsmen will send their sons into the monasteries.²⁸⁷

The peoples of Central Asia are the Kirghiz, the Kalmuks, Kazaks, Tartars and Chantos.

Kirghiz

The Kirghiz are a large and widely-spread division of the Turkish race. In Russian territory they are known as the Kara-Kirghiz of the uplands and the Kirghiz-Kazaks of the steppes.²⁸⁸

Their encampments rarely average over five or six tents except on the best grazing grounds at the best season of the year.²⁸⁹ Their dwellings are the circular tent of felt on a lattice framework. The tents are 12 to 20 feet in diameter with the walls of lattice work four feet high from which wooden pieces are stretched out to a hoop forming the top of the tent. This framework is covered with felts of goats' and camels' hair, and an opening is left at the top for light and smoke.²⁹⁰ In summer these heavy felts are lifted off. The interior decoration of the tent of a wealthy Kirghese is often carried out along artistic lines. The walls are hung with embroideries worked by the women. The floors are covered with

287. Bell, op. cit., p. 26.

288. Etherton, op. cit., p. 32.

289. Semple, op. cit., p. 497.

290. Etherton, op. cit., p. 34.

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carpets and pillows covered with multi-colored chintz and cloth of Russian and Chinese manufacture. In general the furniture is only an occasional low table, a few copper pots and pans and some brass jugs used for boiling water and tea making. Along the trellis-work outside are suspended basins, leather bottles for kumis, guns, harness and clothes. In the winter sheep and goats share the tent.

They dress in long coats stuffed with cottonwool and trousers of similar make tucked into leather knee boots and fur caps pulled down over the ears. A leather slipper is worn with the top boots, and it is removed before entering the tent. The women's dress is similar to the men's with the exception of the headgear. This is a large cloth turban nine to twelve inches high topped by a heavy arrangement.²⁹¹ The men also wear embroidered skull caps surrounded by sheepskin hoods with wool on the inside, or a conical-shaped hat with two slits at the bottom to allow the brim to be turned up.

The diet is mainly milk and mutton. They bake a form of bread from flour and mutton fat. The kumis is prepared from mare's milk by shaking it in a leather bottle and then allowing it to ferment.

Their main occupation is cattle raising, and only a small proportion is engaged in agriculture. Their life is dependent

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The household and general work is done entirely by the women.

The Kirghiz are a social and hospitable race. They never get lost on the steppe, and they do not use the stars for direction.²⁹⁴ The dead are buried on hill tops and the tomb is usually surrounded by a cupola with an encircling wall. Various edible articles may be left on the tomb.²⁹⁵

The system of government is patriarchal. Control in the different sections is vested in tribal elders who have unlimited authority. The people are easily influenced by these elders. They are Mohammedans of the Sunni order.²⁹⁶

The Kara-Kirghiz came from western Mongolia in the eighth and ninth centuries. They settled in the Pamirs, along the Tien Shan and on the lower slopes of the Hindu Kush.

Kazaks

The Kazaks are also a tribe of Turkish origin with a strong Mongol element. Their origin is uncertain but

292. Ibid., pp. 33-6.

293. Semple, op. cit., p. 505.

294. R. Fox, People of the Steppe, 1925, p. 44.

295. Etherton, op. cit., p. 37.

296. Ibid., p. 33.

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292. Ibid., pp. 33-6.
 293. Semple, op. cit., p. 202.
 294. R. Fox, People of the Steppes, 1922, p. 44.
 295. Whistler, op. cit., p. 37.
 296. Ibid., p. 33.

authorities say they came into Asia before the Christian era, and followed up their conquest with permanent settlement. Their main occupation is sheep and cattle breeding, and they are therefore on constant move to fresh pasture.²⁹⁷ The name kazak means wandering horseman.²⁹⁸ They are divided into three hordes. The Little Horde is made up of three chief races and lives between the Aral and Caspian Seas. The Middle Horde is made up of four chief races and is north and west of the Great Horde. These people live between the Tien Shan and Lake Balkhash on the Turgai Steppe and along the lower Sir Darya. The Great Horde is also made up of four chief races and lives in the Altai, on the Semirechensk Steppe and on the upper reaches of the Sir Darya.²⁹⁹ The men are of medium height, broadshouldered and clean-limbed. Their hair is black and is cropped close or shaved. Their round, black tents, horses and herds were once the terror of the world, but now the kazak knows only a wandering life and rides great distances over the plains from pasture to pasture leading a rough but not unkindly life.³⁰⁰

Their dwelling is the tent or yurt 20 to 25 feet in diameter, and 10 to 12 feet high, and it is put up in a very short time. The door is made by a heavy frame of wood and is closed

297. Ibid., p. 182.

298. Fox, op. cit., p. 137.

299. Ibid., pp. 137-8. Lattimore, High Tartary, op.cit., p. 244.

300. Fox, op. cit., pp. 143-4.

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297. Ibid., p. 182.
 298. For. off. cit., p. 137.
 299. Ibid., pp. 137-8. Latimore, High Tartary, pp. 212-213.
 300. For. off. cit., pp. 143-4.

by a movable piece of felt-covered trellis. These tents are exactly like the ones described above.

The men wear a shirt of white linen, baggy trousers of linen or coarse brown camel-cloth tied with a cord around the waist. They wear no socks and wear long, heelless boots of soft leather. Over this they wear a kind of long-sleeved padded dressing gown called a khalat. A man of good family will wear a belt of beaten silver. The women dress like the men in shirt and trousers, but they wear a short, sleeveless, velvet sarafan in place of the khalat. They wear heavy silver ornaments on their wrists, and strings of coins from their plaited hair. On their heads the men wear a flapping hat of velvet or fox skin or the embroidered skullcap. The woman's headdress is of white linen which is wound around the head and has a kind of hood falling sometimes as low as the waist and a linen veil over the ears and under the chin, but the face is not veiled.³⁰¹

These people do not eat much. A drink of kum~~s~~is in the morning or a handful of grapes or bread will suffice them for the day. The only full meal is the evening one when they eat a mixture of rice or mutton. They do not drink intoxicants nor do they smoke. In place of tobacco they have a kind of green paste or snuff which they chew or suck.³⁰²

301. *Ibid.*, pp. 154-6.

302. *Ibid.*, p. 161.

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The life of the family depends on its flocks. The chief animal is the fattailed sheep, and it supplies most of their needs. They also have a few goats, but cattle are rarely found. Their horse is small and sturdy, and is short-legged with an ugly head, long tail and wiry strength. They reckon wealth by horses. Their camel is better than the Arab one. It has a thick, silky coat of hair which, when woven, makes a strong, warm cloth. They also use the camel's milk.³⁰³

Their life is simple and they bargain in the few towns for the necessities and luxuries they cannot provide for themselves. They have few arts and a primitive music with which to accompany their songs and dances on a two-stringed guitar. They have a great store of legend, heroic poetry and love lyrics, but no painting and little carving.³⁰⁴ Their main occupations are hunting, wrestling, racing and horseback games.³⁰⁵ Marriages and funerals are great events, and are accompanied with games and feasting.³⁰⁶

Each tribe or clan has its own private mark called the Tamga to which great reverence is shown. It is used as a seal to sign important documents, and its validity was recognized by the Tsarist government.³⁰⁷

303. Ibid., pp. 157-8.

304. Ibid., p. 161.

305. Ibid., p. 163.

306. Ibid., pp. 161-3.

307. Ibid., p. 138.

The life of the family depends on its flocks. The chief animal is the fattailed sheep, and it supplies most of their needs. They also have a few goats, but cattle are rarely found. Their horse is small and sturdy, and is short-legged with an ugly head, long tail and wiry strength. They reckon weight by horses. Their camel is better than the Arab one. It has a thick, silky coat of hair which, when woven, makes a strong, warm cloth. They also use the camel's milk.³⁰³

Their life is simple and they bargain in the few towns for the necessities and luxuries they cannot provide for themselves. They have few arts and a primitive music with which to accompany their songs and dances on a two-stringed guitar. They have a great store of legend, heroic poetry and love lyrics, but no painting and little carving.³⁰⁴ Their main occupations are hunting, wrestling, racing and horseback games.³⁰⁵ Marriages and funerals are great events, and are accompanied with games and feasting.³⁰⁶

Each tribe or clan has its own private mark called the Tamsa to which great reverence is shown. It is used as a seal to sign important documents, and its validity was recognized by the Tsarist Government.³⁰⁷

303.	<u>Idib.</u>	pp. 127-8.
304.	<u>Idib.</u>	p. 161.
305.	<u>Idib.</u>	p. 163.
306.	<u>Idib.</u>	pp. 161-3.
307.	<u>Idib.</u>	p. 138.

The people are frank, hospitable and courteous. They are Mohammedans, but do not take their religion very seriously. They are also very superstitious.³⁰⁸

All of the Kalmuk tribes are remnants of the Western Mongol tribes or Ölot.³⁰⁹ In the middle of the seventeenth century they migrated en masse into Russia and settled on the banks of the Volga. They returned to Sinkiang in the eighteenth century.³¹⁰ Their homes are similar to the Kirghiz, and their general mode of life is similar. However, they differ in their religion being Buddhists.

Soviet Central Asia is divided into five Soviet Socialist Republics.

Kazakhstan is a nearly empty, semi-desert land linking the oasis country of Central Asia and the steppes of Siberia. There are 3,000,000 people who were once nomadic cattle raisers. They are no longer nomads, but stock-raising is still the principal occupation.³¹¹ The people are closely related to the Turks, and speak a Turkish language. During the recent war this area produced non-ferrous metals, fuels and food.³¹²

Kirghizia has the fertile Fergana Valley every inch of which is being turned to good account.

Uzbekistan has 6,500,000 people and is the richest

308. Ibid., p. 149.

309. Lattimore, High Tartary, p. 272.

310. Teichman, op. cit., pp. 129-30.

311. Mandel, op. cit., pp. 92-3.

312. Ibid., pp. 92-3.

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Turkmenistan is a desert lowland, and the important rivers are the Tedjen and Murghab. After 1924 the important irrigation works are the Valvev and Barsig-Kerker canals, the Kaushut-Bentsky system and the Tashkepru Dam.³¹⁵ In 1937 there were 380,000 acres under cultivation. One of the great problems confronting the engineers is the diversion of the Amu Darya to irrigate the Kara Kum. The people are Turkomens and are Sunni-Mohammedans.³¹⁶

Tajikistan will not be included here.

Agriculture in the entire area is limited to the strips of irrigation along the rivers. There are still a few wandering nomads left. In the northern Caspian fishing is important.

313. Lengyel, op. cit., pp. 369-70.

314. Mandel, op. cit., p. 93.

315. Davies, op. cit., p. 150.

316. Stamp, op. cit., p. 686.

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315. Leach, *op. cit.*, pp. 369-70.
 316. Mandel, *op. cit.*, p. 93.
 317. Davies, *op. cit.*, p. 150.
 318. Stang, *op. cit.*, p. 680.

From the above discussion it may be said that the people make the utmost, to the best of their ability, of their adverse habitat, but that they show no signs of advancement without outside aid.

CONCLUSION

Asia's steppes and deserts are not too attractive places in which to live. They are hot in summer and cold in winter, and permit agriculture only where irrigation is possible. It is an area, however, to which the people are well adjusted, and they make the most of their adverse environment.

A study of any one of the individual groups of people shows how perfectly they have adjusted themselves. Also, the fact that conditions have not changed for many hundreds of years shows that their way of living is the best they can have adopted. The people make use of the materials they have for all their necessities, and their animals are their mainstay. It is from these animals that they get materials for clothing and dwellings, as well as food and drink. Their whole mode of life is adapted to continual movement, and their possessions are such that they can easily be transported.

These people have little contact with the outside world, and government control over them is not particularly strong. As has already been shown, they are difficult to govern.

Any future possibilities for the area would depend entirely on irrigation possibilities. As a rule the soils are fertile, and only need water to make them productive. Also, any

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future development would probably not come from the native peoples, but rather from outside influences.

As an example of what might be done with the rest of the area, Soviet Central Asia may be used. This was an area just as barren as the rest of the deserts and steppes, but the Russians have made into one of their great cotton-producing and manufacturing areas, along with a part of the Siberian steppe area with industry centering around Novo-Sibirsk. The coal of the Kuznetsk Basin is the basis of this industry, and the major source of iron ore is the Magnitogorsk region, though there is some local iron ore. There is also mineral wealth in Soviet Central Asia: coal, oil, copper, lead and zinc being found. It is here that the Russians with their Five Year Plans have collectivized and industrialized the area. It is here that the people have gone beyond the stage of adjusting themselves to their environment, going on to the stage of modifying it through improved irrigation methods. They have made it into an extremely productive area. This example might be followed to good advantage in the other areas, but any possible development will have to wait for the future.

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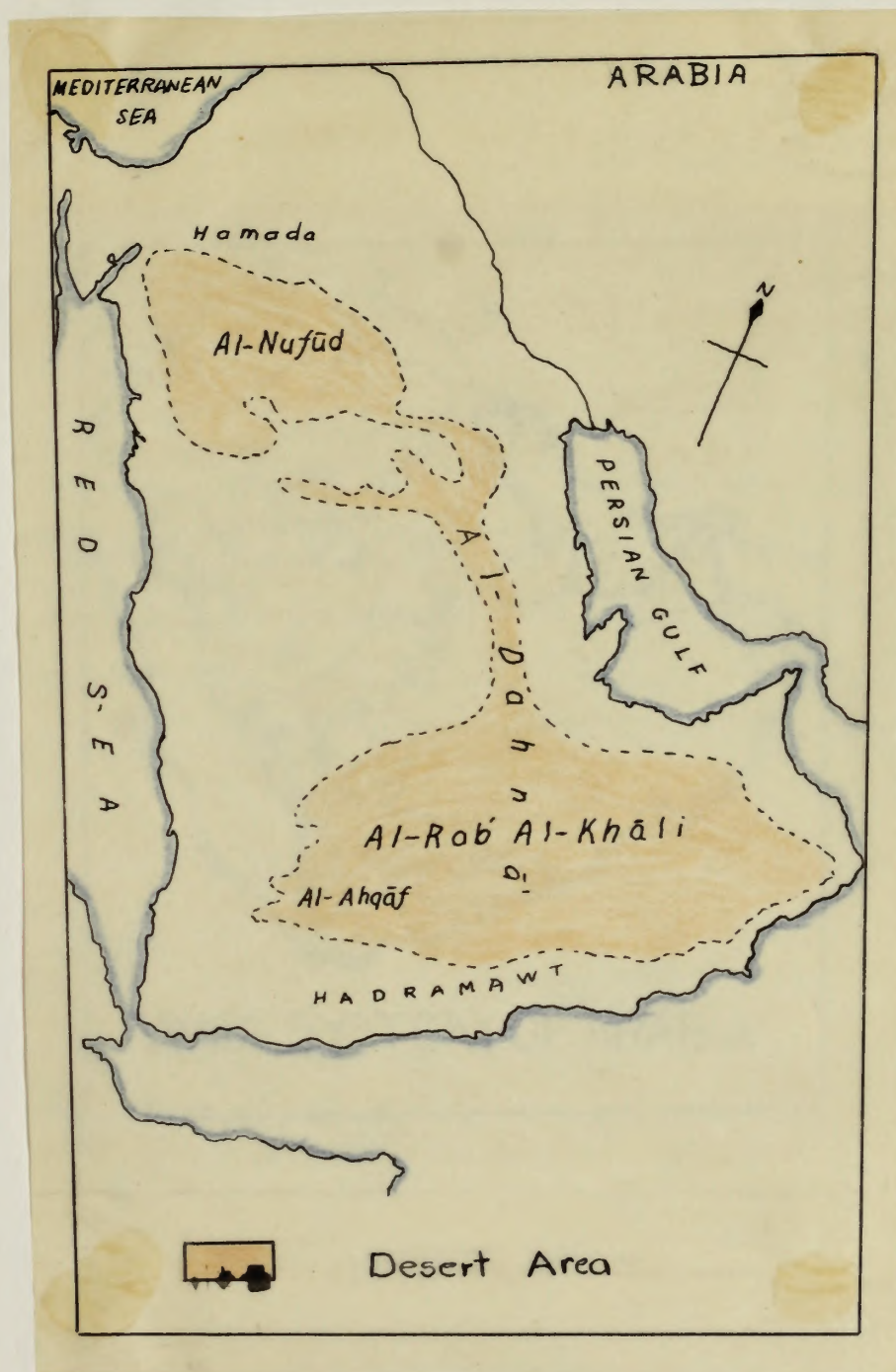
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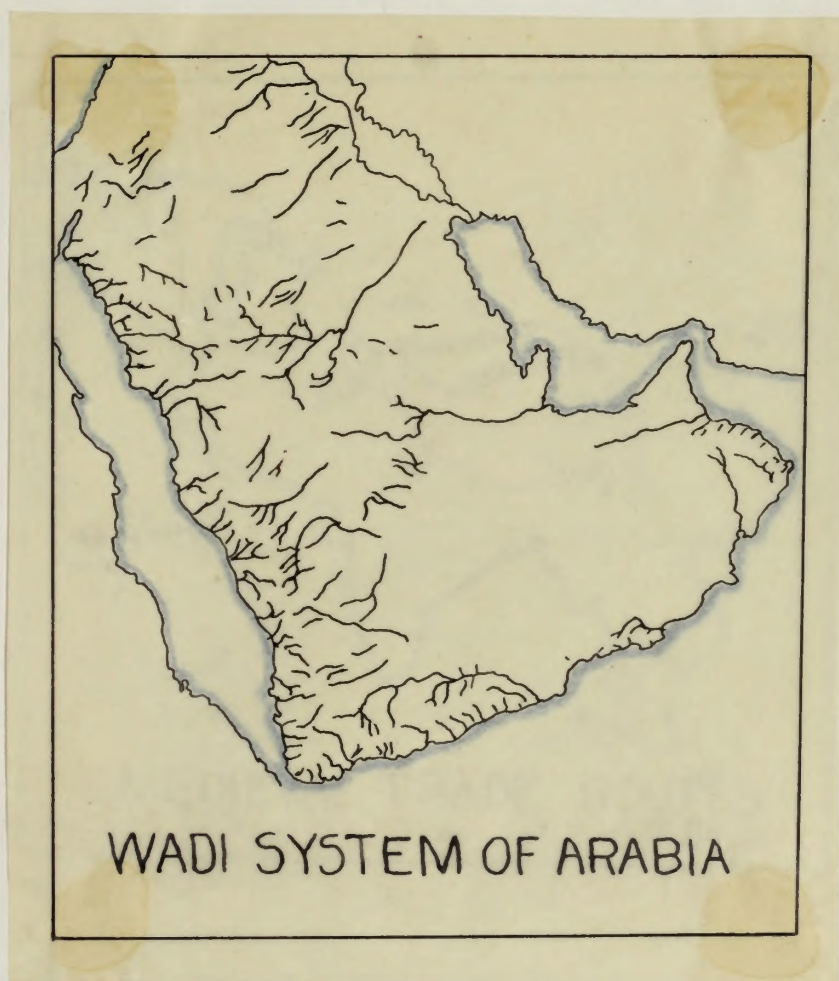
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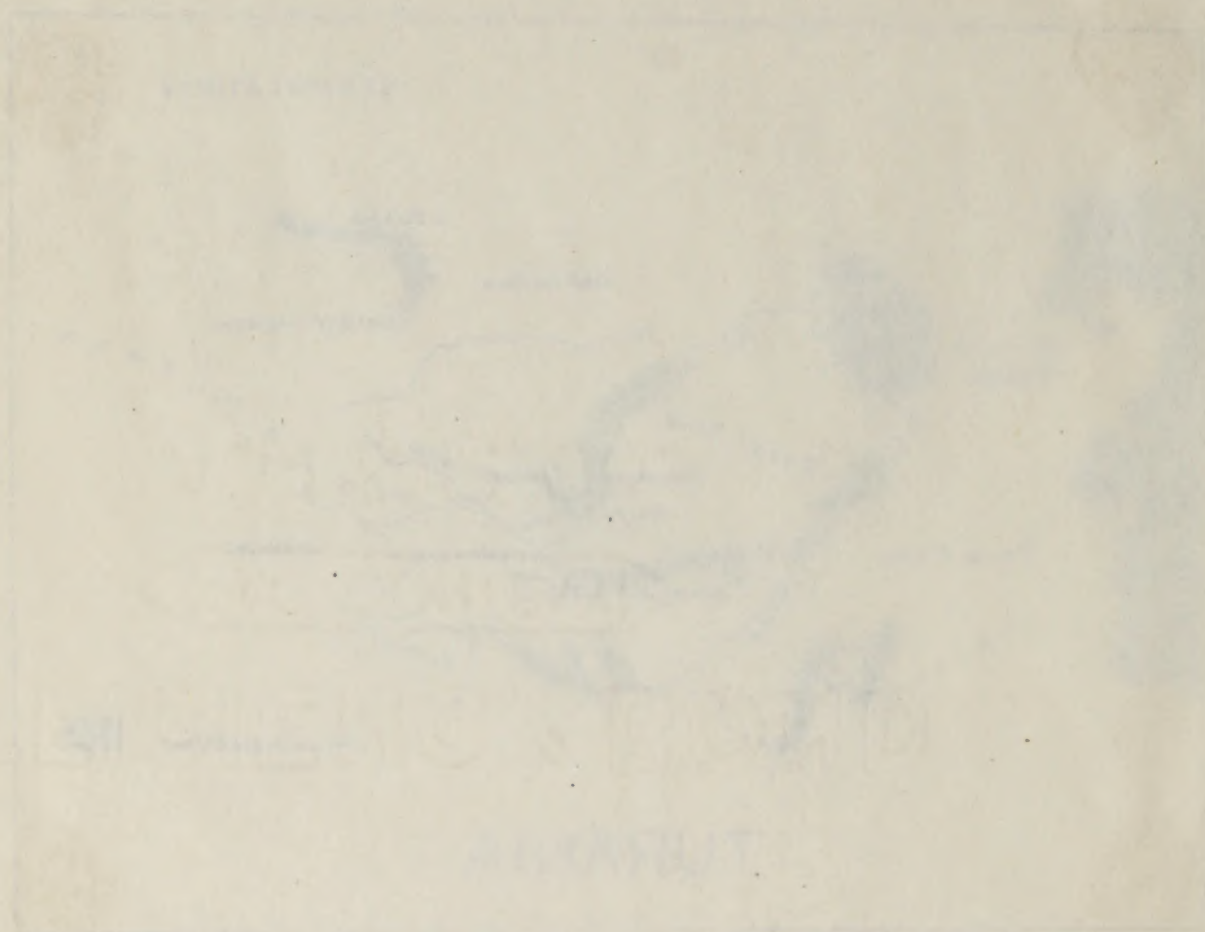


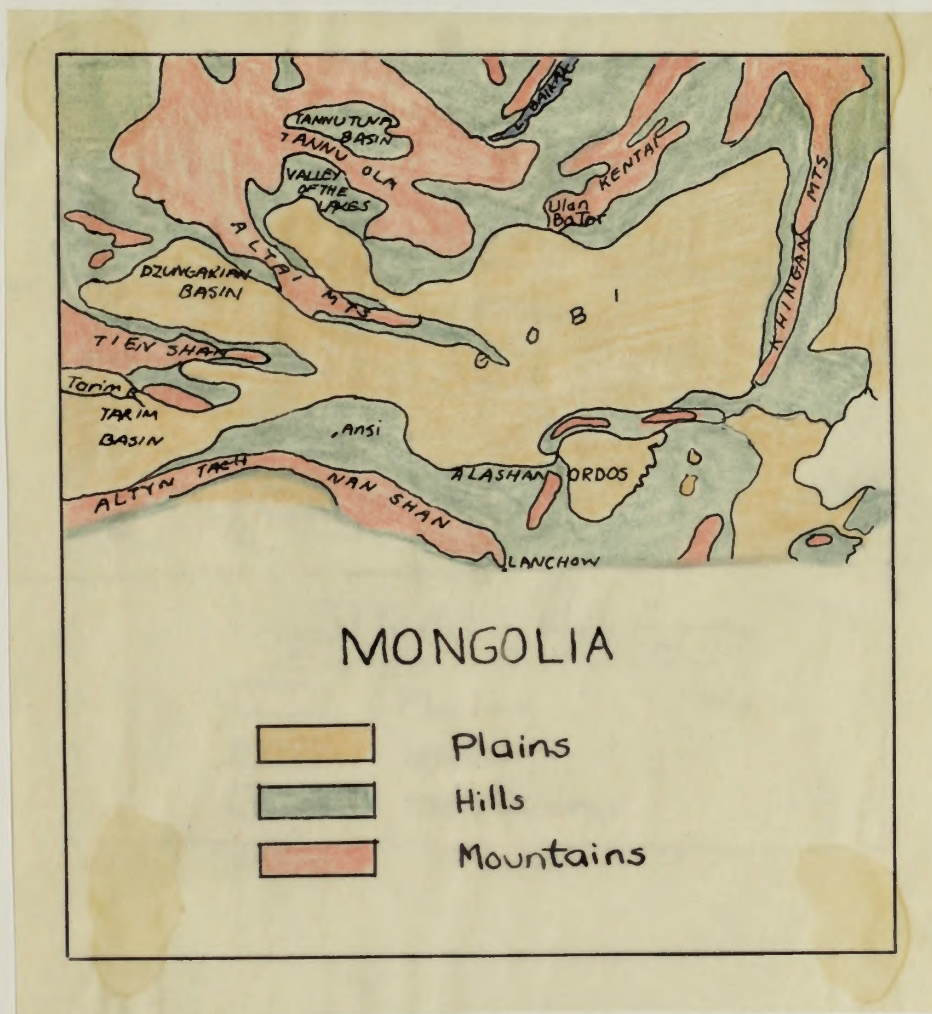




319. Stamp, op. cit., p. 55.

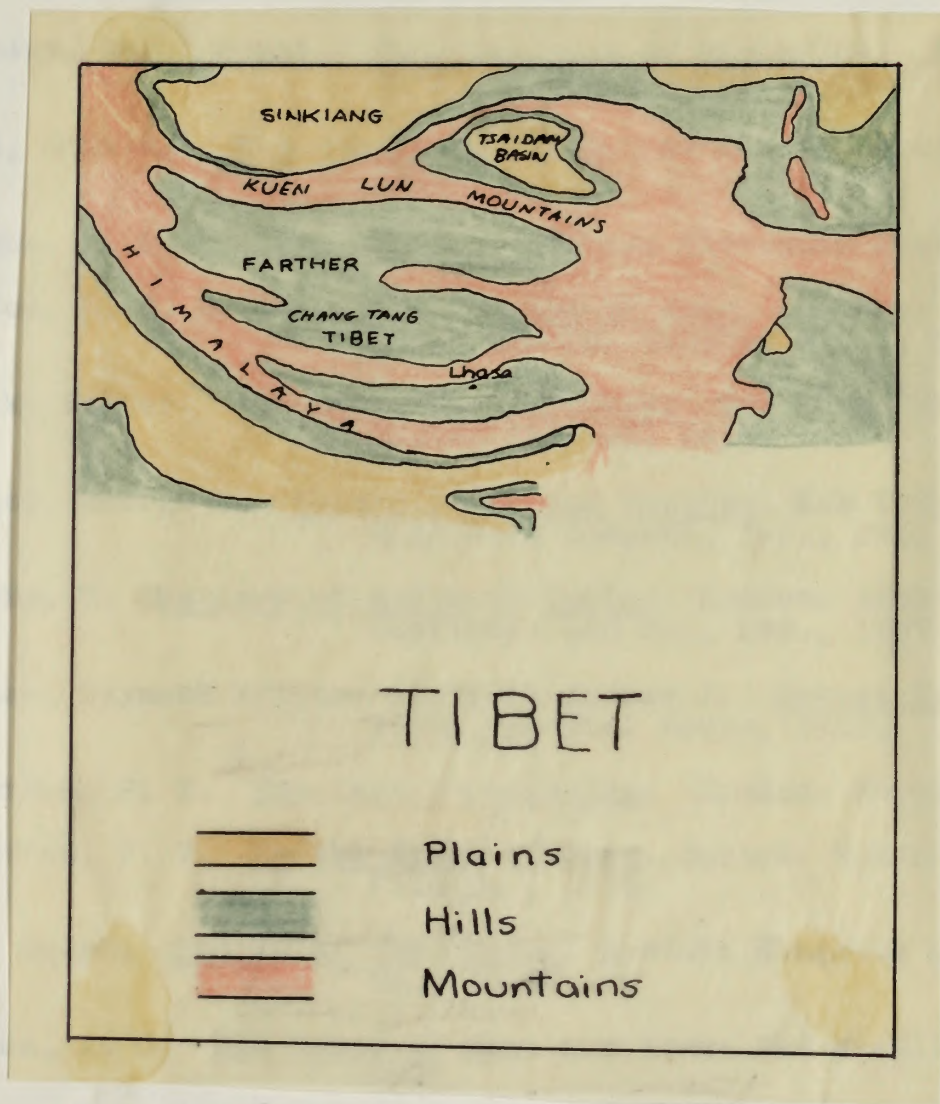


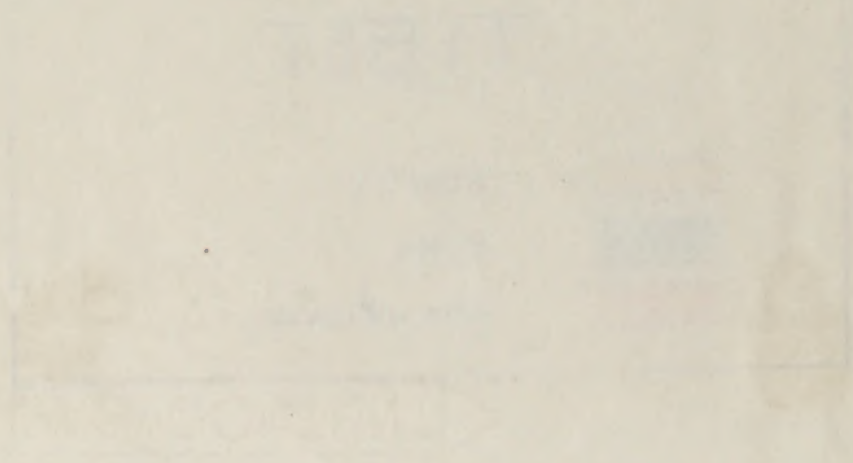
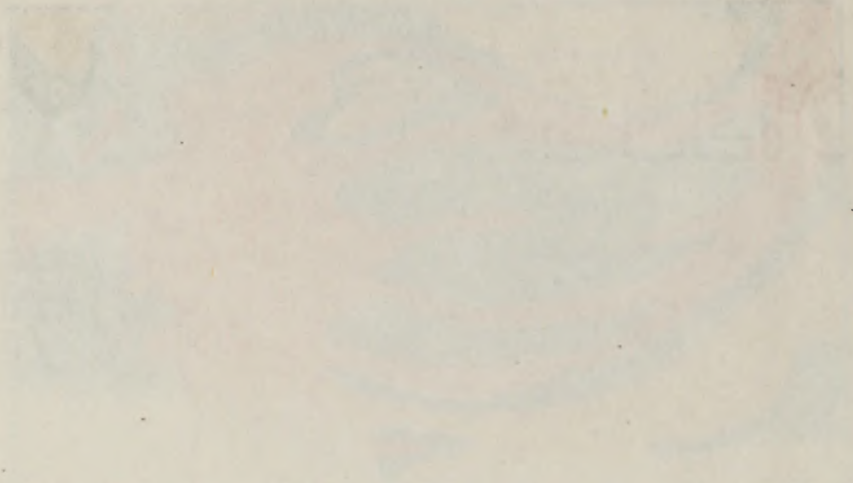












BIBLIOGRAPHY

- Andrews, Roy Chapman. This Business of Exploring. New York: G. P. Putnam's Sons, 1935.
- Bell, Charles. The People of Tibet. Oxford: Clarendon Press, 1928.
- Buxton, L. H. Dudley. China. Oxford: Clarendon Press, 1929.
- Buxton, L. H. Dudley. The Peoples of Asia. London: Kegan Paul, Trench, Trubner & Co., Ltd., 1925.
- Clark, Grover. The Great Wall Crumbles. New York: The Macmillan Company, 1935.
- Cressy, George B. Asia's Lands and Peoples. New York: McGraw-Hill Book Company, Inc., 1944.
- Crooke, W. Natives of Northern India. London: Archibald Constable and Co., Ltd., 1907.
- Davies, Raymond Arthur; Steiger, Andrew J. Soviet Asia. New York: The Dial Press, 1942.
- Etherton, P. T. The Last Strongholds. London: Jarrolds.
- Etherton, P. T. In the Heart of Asia. Boston: Houghton Mifflin Co., 1926.
- Fox, Ralph. People of the Steppe. Boston: Houghton Mifflin Co., 1925.
- Haddon, A. C. The Races of Man. New York: The MacMillan Co., 1925.
- Hamilton, Angus. Afghanistan. Boston: J. B. Millet Co., 1910.
- Hitti, Phillip K. History of the Arabs. London: MacMillan and Co., Ltd., 1943.
- Hosie, Alexander. Manchuria. New York: Charles Scribner's Sons, 1904.
- Howorth, Henry H. History of the Mongols. London: Longmans, Green, and Co., 1876.

BIBLIOGRAPHY

- Andrews, Roy Chapman. This Business of Exploring. New York: G. P. Putnam's Sons, 1935.
- Bell, Charles. The People of Tibet. Oxford: Clarendon Press, 1928.
- Buxton, J. H. Dudley. China. Oxford: Clarendon Press, 1929.
- Buxton, J. H. Dudley. The Peoples of Asia. London: Kegan Paul, Trench, Trubner & Co., Ltd., 1925.
- Clark, Grover. The Great Wall Countries. New York: The Macmillan Company, 1935.
- Cressy, George H. Asia's Lands and Peoples. New York: McGraw-Hill Book Company, Inc., 1944.
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- Davies, Raymond Arthur; Steiger, Andrew J. Soviet Asia. New York: The Dial Press, 1943.
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- Hosie, Alexander. Manchuria. New York: Charles Scribner's Sons, 1904.
- Howorth, Henry H. History of the Mongols. London: Longmans, Green, and Co., 1876.

- Huntington, Ellsworth. The Pulse of Asia. Boston: Houghton, Mifflin and Company. 1907.
- Huntington, Ellsworth, The Character of Races. New York: Charles Scribner's Sons. 1927.
- Ireland, Philip Willard. Iraq. New York: The MacMillan Company. 1938.
- Kendrew, W.G. The Climates of the Continents. Oxford: Clarendon Press. 1922.
- Lansdell, Henry. Chinese Central Asia. Vol. I. London: Sampson Low, Marston & Company, Ltd. 1893.
- Latourette, Kenneth Scott. The Chinese, Their History and Culture. Vol. I. New York: The Mac⁺Millan Company. 1934.
- Lattimore, Owen. High Tartary. Boston: Little, Brown, and Company. 1930.
- Lattimore, Owen, The Mongols of Manchuria. New York: The John Day Company, 1934.
- Lattimore, Owen. The Desert Road to Turkestan. Boston: Little, Brown, and Company. 1929.
- Lattimore, Owen. Inner Asian Frontiers of China. New York: American Geographical Society, 1940.
- Lengyel, Emil. Siberia. New York: Random House. 1943.
- Lyde, L.W. Man in Many Lands. London: A. & C. Black, Ltd. 1925.
- Lyde, L.W. The Continent of Asia. London: MacMillan and Co., Limited. 1933.
- Mandel, William. The Soviet Far East and Central Asia. New York: The Dial Press, Inc. 1944.
- Mikhaylov, N. Soviet Geography. London: Methuen & Co. Ltd. 1935.
- Morden, William J. Across Asia's Snows and Deserts. New York: G.P. Putnam's Sons. 1927.
- Platonov, S.V. History of Russia. New York: The MacMillan Company. 1928.

- Huntington, Ellsworth. The Pulse of Asia. Boston: Houghton, Mifflin and Company. 1907.
- Huntington, Ellsworth. The Character of Races. New York: Charles Scribner's Sons. 1937.
- Ireland, Philip Willard. Irish. New York: The Macmillan Company. 1938.
- Kendrew, W.G. The Climate of the Continent of Asia. Oxford: Clarendon Press. 1938.
- Lansdale, Henry. Chinese Central Asia. Vol. I. London: Sampson Low, Marston & Company, Ltd. 1933.
- Lansdale, Henry. The Chinese, Their History and Culture. Vol. I. New York: The Macmillan Company. 1934.
- Lansdale, Henry. High Frontier. Boston: Little, Brown, and Company. 1930.
- Lansdale, Henry. The Monks of Manchuria. New York: The Macmillan Company. 1934.
- Lansdale, Henry. The Desert Road to Turkestan. Boston: Little, Brown, and Company. 1937.
- Lansdale, Henry. Inner Asia Frontiers of China. New York: American Geographical Society. 1940.
- Lansdale, Henry. Siberia. New York: Random House. 1943.
- Lyde, J.W. Man in Many Lands. London: A. & C. Black, Ltd. 1935.
- Lyde, J.W. The Continent of Asia. London: Macmillan and Co., Ltd. 1933.
- Mandel, William. The Soviet Far East and Central Asia. New York: The Dial Press, Inc. 1944.
- Mikhailov, N. Soviet Geography. London: Methuen & Co., Ltd. 1935.
- Morden, William L. Across Asia's Snows and Deserts. New York: Charles Scribner's Sons. 1937.
- Platonov, S.V. History of Russia. New York: The Macmillan Company. 1938.

- Roerich, George N. Trails to Inmost Asia. New Haven: Yale University Press. 1931.
- Semple, Ellen C. Influences of Geographic Environment. New York: Henry Holt and Company. 1911.
- Skrine, C.P. Chinese Central Asia. New York: Houghton Mifflin Company. 1926.
- Stamp, L. Dudley. Asia. New York: E.P. Dutton and Company Inc., 1944.
- Sykes, Ella, Sykes, Percy. Through Deserts and Oases of Central Asia. London: MacMillan and Co., 1920.
- Teichman, Sir Eric. Journey to Turkestan. London: Hodder and Stoughton Limited. 1937.
- The International Geography. ed. Hugh Robert Mill. New York: D. Appleton and Company. 1919.
- The New Orient. Chicago: The Open Court Publishing Company. 1933.
- Widtsoe, John A. The Principles of Irrigation Practice. New York: The MacMillan Company. 1914.
- Wright, George Frederick. Asiatic Russia. London: Eveleigh Nash. 1903.

Roerich, George N. Trails to Inner Asia. New Haven: Yale University Press. 1931.

Seppie, Ellen C. Influences of Geographic Environment. New York: Henry Holt and Company. 1911.

Sklene, C. I. Chinese Central Asia. New York: Doubleday Mitchell Company. 1933.

Stamps, I. Dudley. Asia. New York: E. P. Dutton and Company Inc. 1934.

Sykes, H. H. Through Persia and Usses of Central Asia. London: Macmillan and Co. 1920.

Tscherning, Sir Eric. Journey to Turkestan. London: Hodder and Stoughton Limited. 1937.

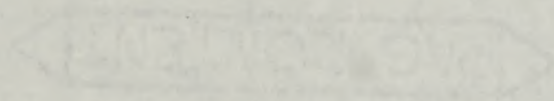
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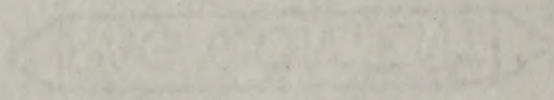
Wright, George Frederick. Asiatic Russia. London: Eyre and Spottiswoode. 1903.

A. F. K. & Co.



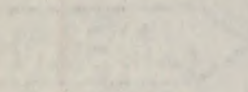
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